The
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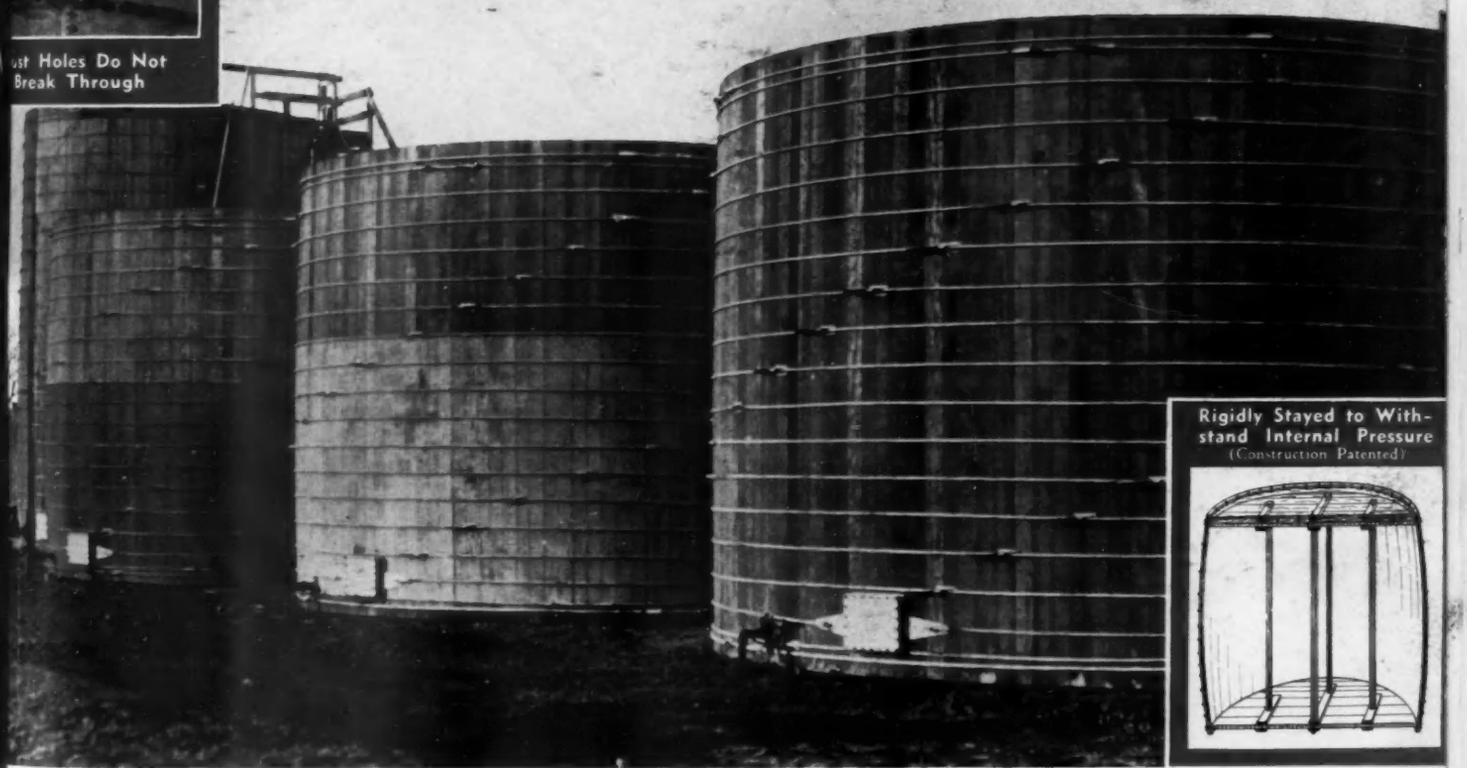

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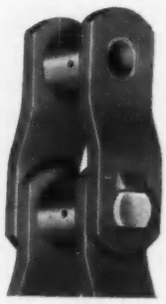

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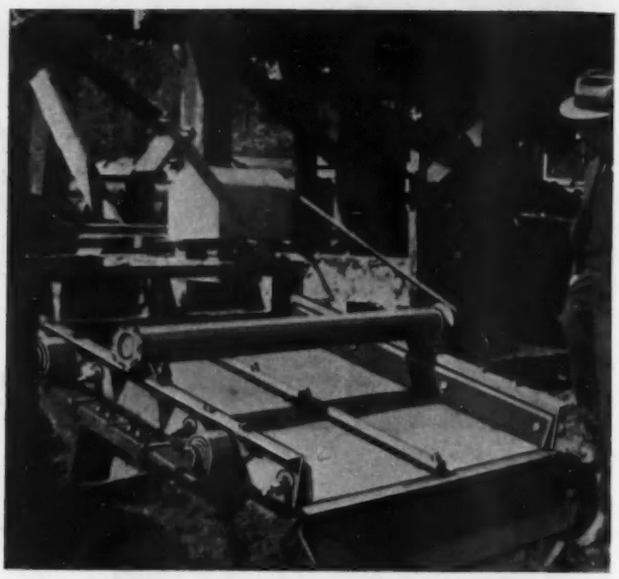

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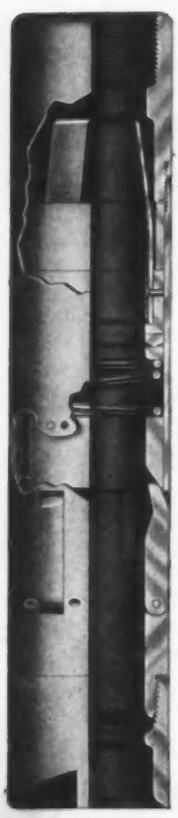

Fig. 25—External Drill Pipe Cutter Overshot Assembly

Fig. 43—Rotary Releasing Socket, Packing Type, Complete

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The Changing Panorama

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22 *American Chemical Society, New York.*
25-26 *American Petroleum Institute, Division of Production, Southwestern District, Plaza Hotel, San Antonio, Texas.*

MAY
1-3 *Natural Gasoline Association, Tulsa, Oklahoma.*
8-11 *Oil and Gas Power Division, American Society of Mechanical Engineers, Tulsa, Oklahoma.*
14-16 *American Petroleum Institute, Mid-Year Meeting, Mayo Hotel, Tulsa.*
20-21 *National Oil Scouts Association, Corpus Christi, Texas.*

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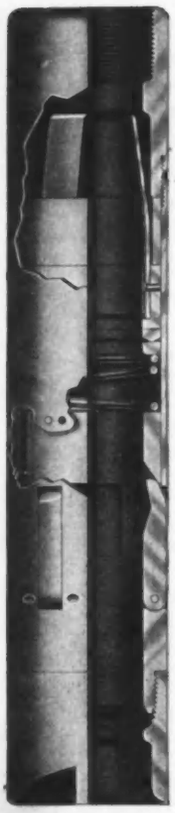

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and by other formations that take drilling mud and cement slurry out of the hole. Some wells are troubled by one or the other condition, while others encounter both. The use of sealing materials for overcoming the loss of circulation while drilling and loss of cement slurry while cementing has been successful. It is described on page 33.

Refined Prices

MID-CONTINENT refined prices, by advancing to 4¼ cents a gallon for third grade and corresponding prices for the better qualities, now are at levels that are the highest of this year and higher than the peak of 1934. The current upward swing of the Mid-Continent market started about March 1 and has risen one full cent since that time. Indications are that there will be further increases in the price of refined prices. Page 41.

Kansas Oil Bills

THE Kansas legislature has shown its interest in the oil business by passing three bills that will expand conservation efforts. The three bills deal with operating problems, including repressuring, plugging of wells, and injection of salt water in old wells. As a result the state will have one of the most comprehensive plans of any oil producing state. An open hearing on the subject was held April 12. Page 18.

Gas Line Bill

THE bill proposing the construction of a Texas state-owned natural gas pipe line from the Panhandle to Detroit met with determined opposition in the Texas House last week. It finally was sent to a committee for ironing out the objections. This committee report is expected to be presented Monday. Page 12.

Bottom-Hole Pressures

PROPER interpretation and application of bottom-hole pressure measurement data will advance efficient production methods, members of the Mid-Continent Section of the American Petroleum Institute Division of Production were told at their spring meeting. The several economical features of this work are discussed in the A. P. I. paper published on page 27.

THE Texas legislature last week considered many important oil bills. The market demand law was passed by both branches of the legislature by a sufficient majority to insure its becoming an immediate law with Governor Allred's signature. The interstate compact bill also was passed by the Senate after receiving the House's okeh. A House committee was considering the bill proposing the construction of a large state-owned gas line from the Panhandle to Detroit. Page 12.

An aerial view of the new Gillis field, Calcasieu Parish, South Louisiana

Executives Express Optimism

JACK LOGAN
Associate Editor

The heads of the oil companies generally consider prospects favorable. This is indicated in current annual statements to stockholders. The leaders still entertain some anxiety, however, regarding governmental proposals. Rising taxes are vigorously assailed.

IN connection with annual reports to stockholders for 1934, made public within recent weeks, the executives of the oil companies have generally subscribed to the opinion that better times are ahead for the industry. They believe, in most instances, that the industry some time ago dragged bottom and that the present outlook is the brightest that has prevailed for considerable time. They report improved earnings for 1934, and express hope that 1935 will bring even better records.

This prevalence of optimism among the executives is perhaps the most convincing of all the numerous indications that the future will be favorable for the industry. For while no man can definitely foretell the future, the executive must be able to read the signs of the times and thereby foresee probable trends. He must be this sort of prophet, because it is his responsibility to see ahead for his company, and to plan and work accordingly. When the executives of various oil companies express optimism over the business outlook, therefore, as they have recently done, it appears that there are some especially good grounds for cheerfulness.

Some Anxiety Also Felt

IT is not intended to convey the thought that the 1934 reports are overflowing with optimism and cheerfulness. They are not. They embody some anxiety for the future, especially in connection with the steady increase in the industry's tax burden, and to a lesser extent in connection with control and reform legislation, enacted and proposed. The reports also point out troublesome problems and difficulties within the industry, such as unprofitable results in refining and unsound marketing conditions.

But on the whole, the reports are inclined toward hopefulness, if not optimism. They reflect more confidence, less uncertainty, than the similar reports of a year ago. The increased confidence has come with a year and a half of generally favorable earnings. The dissipation of uncertainty has come with the recognition that fundamental economic laws can still be relied on generally in business planning; that those laws, after all, have not been, and probably will not be, greatly interfered with by governmental or other artificial influences.

Reports of 15 Companies Studied

THIS analysis of the prevailing sentiment and thought among oil company executives is based on the annual reports of 15 different companies. Among the 15 companies represented were both majors and independents; both fully integrated concerns and companies specializing primarily in one or more branches of the industry. The reports consequently reflect the conditions and problems of the whole industry, with all the branches represented.

That the 15 companies may be considered fully representative of the industry is attested by the wide variety of subjects and problems stressed in the reports. There were raised in the comments practically as many important subjects as there were companies.

Companies and Officials

THE 15 companies and the officers who issued the reports included the following: The Texas Corporation, C. B. Ames, chairman, and W. S. S. Rodgers, president; Union Oil Company of California, L. P. St. Clair, president, and G. H. Forster, comptroller; The Ohio Oil Company, O. D. Donnell, president; Barnsdall Corporation, E. B. Reeser, president, and Wm. Dewey Loucks, chairman; Seaboard Oil Company of Delaware, John M. Lovejoy, president; Sun Oil Company, J. Howard Pew, president; Associated Oil Company, William F. Humphrey, president; The Atlantic Refining Company, J. W. Van Dyke, chairman of the board; Gulf Oil Corporation, W. L. Mellon, chairman, and J. F. Drake, president; Phillips Petroleum Company, Frank Phillips, president; Continental Oil Company, Dan Moran, president; Humble Oil & Refining Company, R. L. Blaffer, president; Simms Petroleum Company, Edward T. Moore, president; The Pure Oil Company, Henry M. Dawes, president; The Standard Oil Company (Ohio), W. T. Holliday, president.

Subjects Mentioned in Reports

SOME of the subjects that were touched upon, as being sufficiently important for mention to the stockholders, were discussed in numerous reports, reflecting general interest. Others were mentioned only in one or several reports.

The range of the subjects and the predominating

opinions upon them may be indicated in the following statements, herewith designed to reflect the gist of the reports.

1. The immediate, as well as the long-term, outlook for the industry has become materially brighter during the past year.

2. Steadily rising taxes on oils threaten to reduce oil consumption, to the detriment of the oil industry.

3. New laws and threats of new laws still constitute an unsettling influence, but probably are causing less fear and uncertainty than formerly.

4. While government regimentation of the industry is to be deprecated, government help in balancing supply with demand (as through proration and interstate compacts) is desirable.

5. Federal government cooperation has been beneficial in some instances, as in strengthening crude production control in Texas lately and in promoting stable markets in California, through the Pacific Coast Marketing Agency.

6. Government-sponsored pegging of crude oil at $1 a barrel, while refinery prices have sagged, has profited producers but penalized refiners. There is promise, however, that the disparity between the crude and refined oil markets can be corrected through improvement of refinery prices, rather than through reduction of crude prices.

7. The need for finding new crude oil reserves is becoming increasingly urgent, and it has become advisable for companies to spend larger sums in acquiring and developing producing properties.

8. Oil company operations in 1934 were generally profitable, losses having been confined mostly to refining or refining-marketing concerns.

9. Substantial savings have been made by numerous oil companies through redemption of bonds and substitution of low-interest bank borrowings for some of the called bonds.

Outlook Considered Brighter

IN addition to some whose statements could be interpreted as optimistic, there were at least four executives who specifically expressed the conviction that the industry is on the up-grade. They were the heads of Humble, Standard of Ohio, Pure, and Sun companies.

Speaking for Humble Oil & Refining Company, R. L. Blaffer, president, revealed that earnings were favorable in 1934, a definite turning point having been reached prior to the beginning of 1934. Prospects for the future appear promising, in his opinion. "All departments are functioning smoothly," he stated, "and generally speaking, we feel the company in all phases of the business is in very good condition."

W. T. Holliday, president of The Standard Oil Company (Ohio), stated that the outlook is considered better than for some time, with January and February, usually months of lowest gasoline consumption, showing improvement in financial results over last year's last quarter. The average service station price of gasoline is about one cent a gallon above that for the final quarter, he said, and a little above the average for all 1934.

The East Texas field has been fundamentally responsible for much of the industry's difficulties, Mr. Holliday asserted, but it cannot continue for any extended period to be a dominating factor. "We believe," he said, "that the industry has already 'dragged bottom.' New crude oil discoveries have not been offsetting current production; and it seems likely that any new pools will receive a much more orderly development, so that there will not be a repetition of the chaos of the East Texas pool"

Prospects Good for All Branches

THE present outlook is favorable for all branches of the industry, in the opinion of Henry M. Dawes, president of The Pure Oil Company. Concerning the producing division's prospect, he said: "Production is now in very fair balance with market demand. A reduction in the price of crude at this time would, therefore, not seem to be justified, and the possibility of an increase would be much more reasonable."

Prospects are also good for the refining and marketing divisions, Mr. Dawes indicated. For "With the price of crude oil reasonably stabilized on the basis of both conservation and economics, and the price of refined products disproportionately low to crude, it would seem that a general advance in gasoline and oil products should be anticipated."

J. Howard Pew, president, told Sun Oil Company stockholders that the business outlook is now more optimistic than it was a year or a few months ago, although still somewhat uncertain because of legislative and governmental activities.

Protests Against Rising Taxes

INDICATIVE of the seriousness of the problem of increasing taxes was the fact that seven of the 15 reports to stockholders embodied complaints against excessive tax burdens.

Mr. Pew of the Sun company asserted that high taxes constitute the gravest menace to the future security of the industry. Along with their protest against high taxes, C. B. Ames, chairman, and W. S. S. Rodgers, president, of The Texas Corporation, pointed out that in 1934 the gasoline tax was higher than the price at the refinery, being therefore a 100 percent sales tax on the wholesale price. Total taxes paid or accrued by their company to taxing authorities in 1934 were over $70,000,000, it was revealed, while the company reported net profit of $5,545,205.

W. L. Mellon, chairman, and J. F. Drake, president, of Gulf Oil Corporation, advocated not only resistance to further increases in gasoline taxes but also agitation

(*Continued on page 46*)

Supreme Court *Hears Case Involving Principles of* Oil Code

Washington, D. C.—Questions involving the basic principles of the oil code, and indirectly sharply affecting the whole code structure under the National Industrial Recovery Act, were brought before the United States Supreme Court April 10 from the United States Circuit Court of Appeals for the Ninth Circuit.

Two questions were certified to the highest court, directed to whether Congress, in giving the President power to control oil production by means of a code, properly stated its delegation of authority. They were presented in an appeal from the United States District Court for the Southern District of California taken by Wilshire Oil Company, Bandini Petroleum Company, Commodore Petroleum Company, Wilshire Annex Oil Company, Ambassador Petroleum Company and George L. Macheris and Alfred P. Macheris.

The Supreme Court is advised that there is pending in the Ninth Circuit Court of Appeals an appeal taken by the above named from an order of the Southern California District Court restraining them from producing crude petroleum from their respective wells in Santa Fe Springs and Huntington Beach oil fields in excess of the amount allocated in and by the quotas and operating schedules approved and ordered by the Petroleum Code Administrator.

The injunction had issued in response to the petition of Administrator Ickes who alleged that the production sought to be restrained is affecting interstate commerce in petroleum and is causing waste of a natural resource required to be controlled in the interest of national security.

The Circuit Court asked instructions from the United States Supreme Court in respect of the following:

(1) Are the standards controlling the production of petroleum in the United States, which production affects (a) interstate commerce in petroleum, and (b) the national security and defense by prevention of waste of the natural resources of petroleum essential for the creation of power in the instruments used in such defense and in maintaining such security, sufficiently stated in the National Industrial Recovery Act to constitute legislation as a basis for the administrative regulation of such production?

(2) Does the attempted creation of a code of fair competition for the petroleum industry under the provisions of Section 3 of Title I of the National Industrial Recovery Act, which code establishes definite and appropriate standards for the regulation of production of petroleum affecting interstate commerce and for preventing its waste as a natural resource contributing to the national defense and security, and authorizes administrative orders limiting the production of the individual producers to an amount less than they otherwise would be entitled to produce, constitute the exercise of a legislative function which the congress cannot delegate?

The highest court is informed that the code supplies a definition of standards for the regulation of production in the petroleum industry throughout the United States. It includes provisions prohibiting production by petroleum producers in excess of individual quotas to be determined by administrative processes provided in the code, based upon the standards it establishes. The order appealed from is to restrain violation of such quota limitation. The government conceded that the injunction ordered requires a production by the appellants less in amount than they otherwise could legally take and which they have been producing and can produce.

The lower court stated that the decision of the Supreme Court in Panama Refining Company case "suggests a question of the sufficiency of the National Industrial Recovery Act as creating proper or any standards for the administrative regulation of petroleum production (a) affecting interstate commerce or (b) preventing waste in a natural resource providing power for the instruments used in the defense of the national security."

It asserted that from the text of paragraph (b) of Section 3, of the Act, providing that "the provisions of such code shall be standards of fair competition for such trade or industry or subdivision thereof," it is arguable that Congress expressly delegated to the executive the determination of all standards upon which shall rest such regulation of petroleum production af-

(*Continued on page 49*)

NRA Investigators Hear Utility Proposal

Washington, D. C.—Recommendations that all regulations developed by the oil administrator be made law for the duration of the recovery act; declaration of the oil industry as a public utility, and regulation of pipe line rates by the interstate commerce commission have been laid before the Senate Finance Committee investigation of the NRA, by A. H. Blackall, independent jobber of Evanston, Ill. Assailing the "holy thirty-one" integrated companies which he declares wholly control the oil industry, Blackall told the committee that only by these steps can the independent interests be protected. Production and refining quotas and allocations must continue, he said, and with them should be the regulation of marketing and the calculation of refinery prices of products by the oil administrator. If the declaration of the administrators regulations as laws operates effectively, he recommended, the plan should be made permanent.

Rayburn Bill Draws Attack Before Committee

Washington, D. C.—Virtual cessation of development of pipe lines for the distribution of natural gas and widespread damage to investors will result from enactment of the Rayburn Public Utility Holding Company Bill, members of the House Interstate and Foreign Commerce Committee were warned April 9 by R. W. Gallagher of Standard Oil Company (New Jersey).

Any legislation affecting natural gas, as the Rayburn bill would do, he declared, necessarily concerns the oil industry. "None of the reasons recited for the enactment of this legislation apply, so far as I know, to oil companies," he said. "Why therefore should oil companies be required to dispose of their natural gas utility securities immediatly, when holding companies which have complicated corporate and financial structures may be permitted to retain all of their securities until January 1, 1940? By that date the legislation may be modified so as to permit certain companies to continue to exist. But that would be too late for the oil companies; they already would have been compelled to dispose of their stock in natural gas utility companies. The question, therefore, arises, why is it necessary so to penalize the oil companies?"

Restrictions which would be imposed on oil companies were characterized by Gallagher as "so hampering and so drastic that an oil company would be forced to dispose of its securities of natural gas utility companies before October 1, 1935."

"It is not the purpose and intent of this bill to regulate the oil business", he pointed out. "It clearly is the intent that the public utility business shall be separated from all other businesses, notwithstanding any natural affiliation that exists in fact. This policy is carried out in the provisions of the statute, which make it actually impracticable and impossible for an oil company to register and comply with the law."

Texas House *Committee to Report Monday on Proposed* State Gas Line

Austin, Texas.—The bill to enable the State of Texas to construct a gas pipe line from the Panhandle to Detroit and St. Louis met with determined opposition from the House last week.

A Sub-Committee of the House Committee on Oil, Gas and Mining will report to the committee Monday night on the bill advocated by Governor Allred to construct a gas pipe line from the Panhandle to Detroit. The purpose of the line is to absorb large quantities of sweet gas now blown into the air by Panhandle stripping plants.

The first hearing on the bill was held Monday night and resulted in the measure being sent to a sub-committee of the House Oil, Gas and Mining Committee. The sub-committee was instructed to revise the bill to meet objections brought out at the hearing.

State Tax Commissioner R. B. Anderson, presented the bill, which has been advocated by Governor James V. Allred as a logical solution to the Panhandle gas waste problem.

Anderson stated that as a result of investigations carried on since last December, he was convinced that the project was practical.

He pointed out that Dr. E. H. Sellards of the University of Texas had made a study of the gas remaining in the reservoir, and found that the reserve was sufficient.

The engineering firm of Hawley, Freese and Nichols had determined that the operation of the line was practical, and that it could be built for 50 to 60 million dollars.

When these facts were determined, they were presented by Anderson to President Roosevelt, who approved the general program and asked that it be submitted to Secretary Ickes.

Ickes, in turn, submitted the project to P. W. A. attorneys, representatives of national conservation boards and all other federal agencies which might conceivably be affected by the plan.

Each of these gave approval before the matter was submitted to the Texas Legislature, Anderson said.

He stated that the City of Detroit had agreed to purchase part of the gas in increasing quantities until they were accepting 30 billion feet at the end of the first five years of operation. It would require a 26-inch line from the Panhandle to Detroit to carry this load.

The Missouri Corporation Commission is now investigating the needs of the City of St. Louis, Anderson said, and had estimated that requirements there would total at least 20 billion feet per year. A 24-inch line would be needed to handle this load.

It was planned to pay Panhandle gas producers four cents per thousand the first two years, five cents for the second two-year period and six cents thereafter.

The gas would be delivered to the cities at 25 or 30 cents.

The project would be financed entirely from federal funds, Anderson said. If $60,000,000 is required, one-third or $20,000,000 would be an outright grant of PWA funds. The remaining $40,000,000 would be a loan.

Engineers estimated that the loan, together with four per cent interest, would be paid out within 20 years.

First Assistant Attorney General Scott Gaines had furnished Anderson with an opinon holding constitutional the bill as introduced.

All net profits from the operation of the concern would be turned to the General Revenue Fund of Texas, under a provision in the act.

Most of the opposition to the bill was directed at the broad powers granted the corporation which the bill would create, and from the proposal to place the State in direct competition with private industries.

Members of the Legislature also objected to the fact that only $6,000,000 of the funds would be spent in Texas on the construction of 100 miles of line and the supplementary equipment required. Neither would the State benefit from the steel fabrication, which Anderson stated would tax the capacity of every plant in the United States for one year.

There was no limitation in the act to prohibit the construction of other lines, both within and without the State. Most of the property of the corporation would be subjected to ad valorem taxes in other states through which the line passed, while in Texas the properties would be tax-free. This also met with protest.

George Sears, Houston Oil Company attorney, stated that it was probable that the operations of the concern, from the conservation standpoint, would not even be subject to the regulation of the Texas Railroad Commission, so broad was the grant of power.

Texas Senate Adopts Interstate Compact

Austin.—The Texas Senate Thursday passed finally the oil states compact bill which will permit the governor of Texas to act with other oil producing states to prevent the production of oil to an extent that would result in physical waste. The vote was 26 to 0. which means that the bill may become law as soon as it is signed by the governor.

The House had already passed the bill by a two-thirds majority. Speaking on the bill shortly before the final vote was taken, Senator Clint Small of Amarillo declared that in his opinion the entire act was unconstitutional, but that if it is valid, it will permit curtailment of production to market demand. He also expressed the opinion that it was the first step toward federal control.

Texas Market Demand Bill Goes to Governor

Austin, Texas.—The Texas Senate last week passed the new market demand bill by a vote of 21 to three. There were no amendments to the bill as passed by the House, where the favorable vote was 143 to one. The vote in both houses was sufficiently large to insure immediate effectiveness when the act is signed by the governor. Although the governor has declared he favors proration only on the basis of physical waste, he is expected to sign the bill, as it only permits the commission to consider market demand, and does not make this consideration mandatory. Advocates of the measure, however, admit that the question of the governor signing is a hurdle they will have to overcome.

Thomas Bill Hearings May Be Thrown Open

Washington, D. C.—Hearings next week on the Thomas Oil Bill may be thrown open to the industry as a result of applications for time which have been filed, it was indicated April 11 by members of the Senate Committee on Mines and Mining. Originally it was planned to hold the hearings in order that state officials might present their views, the thought being that the whole subject had been thoroughly canvassed at hearings last year.

So many applications for opportunity to testify have been filed, however, that the committee may permit representatives of the various interested groups in the industry to appear. Members of the committee today were undecided whether, if the hearings were broadened, to permit the discussion of the whole subject or restrict witnesses to new material.

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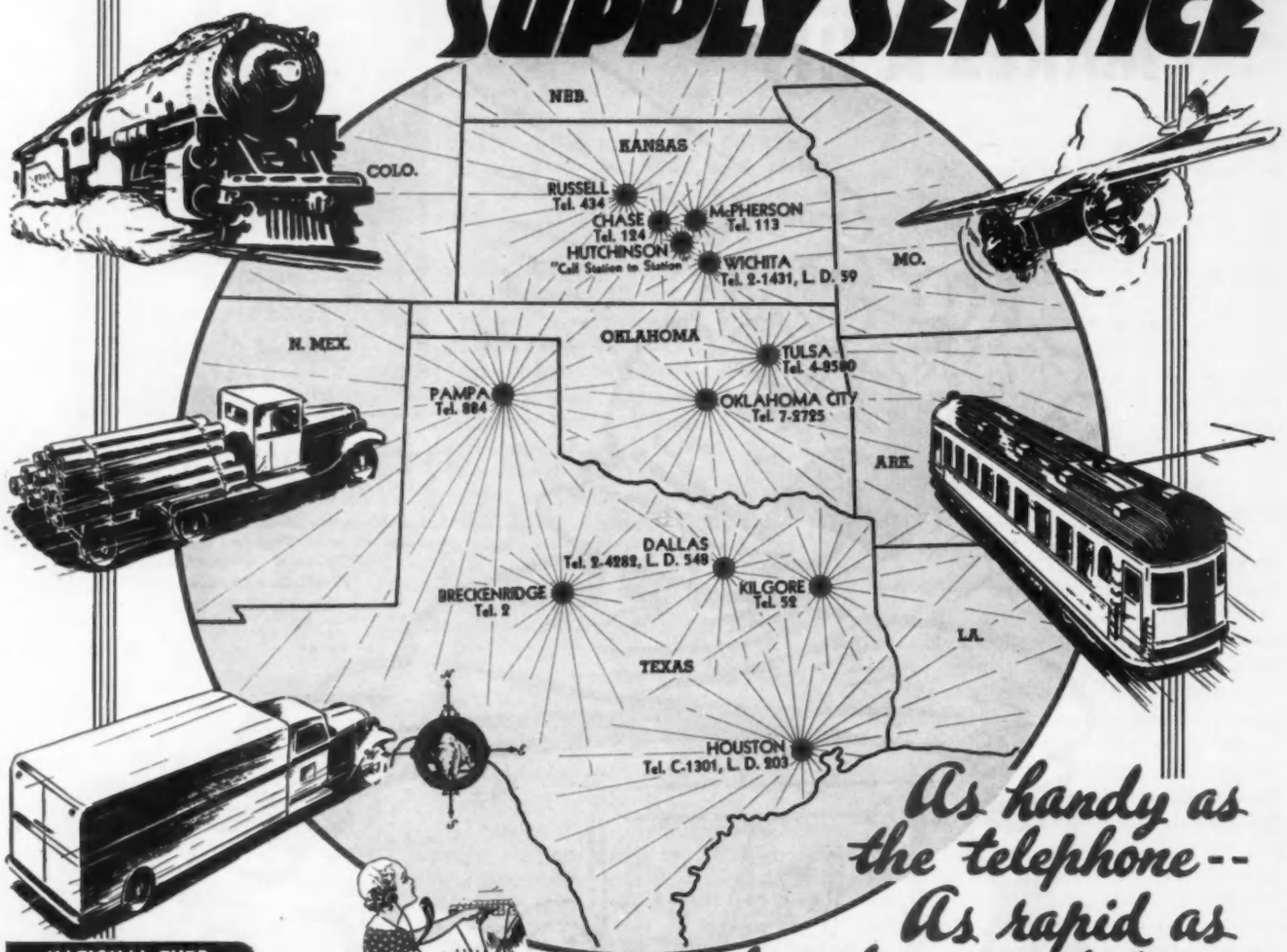

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MEN IN THE INDUSTRY'S NEWS

A. W. PEAKE, vice president in charge of production for Standard Oil Company of Indiana, has been elected chairman of the board of the company's Mid-Continent subsidiaries, which are Stanolind Oil and Gas Company, Stanolind Pipe Line Company and Stanolind Crude Oil Purchasing Company, all of which have headquarters in Tulsa. In the future Mr. Peake will spend the majority of his time in Tulsa on general supervision of the three companies. F. O. Prior, president of Stanolind Oil and Gas Company, and R. S. Ellison, president of Stanolind Crude Oil Purchasing Company and Stanolind Pipe Line Company, will continue in their present positions.

T. R. BIBEE, drilling superintendent for Mexican Gulf Oil Company, Tampico, Mexico, is visiting in Houston. He attended the Houston Oil show and Wildcat dinner.

ED. H. GRISWOLD, JR., assistant general superintendent of production for Continental Oil Company in the Fort Worth division, was scheduled to return last last week from Peru, Indiana, where he was called by the sudden death of his father, Dr. Edwrad Harvey Griswold, 80, who was director of a hospital.

JAMES L. TATUM, formerly chief geologist for the Mexican subsidiaries of Continental Oil Company, is now doing consulting work with headquarters at McAllen, Texas. He has specialized on Mexican land and geological problems.

DR. DONALD C. BARTON, geologist and geophysicist associated with Humble Oil & Refining Company, was the featured speaker at the Houston Geological Society's weekly meeting April 11. He discussed areal mapping in Southeastern Oklahoma.

RESIGNS »
To Operate Independently

Kenneth D. Pardee has resigned as production superintendent in the Montana-Wyoming division of The Texas Company and will become an independent operator. Pardee is a brother of Harold N. Pardee, assistant manager of the Oklahoma-Kansas-Kentucky division of The Texas Company. Kenneth Pardee was born at Butler, Pennsylvania in 1898. After one year of college he decided to enter the oil business. In 1917 he went to Texas, where he dressed tools and drilled in the Ranger and Breckenridge districts during their boom. He pioneered in the Borger, Texas, district by dressing tools for Humble Oil & Refining Company in 1920. From 1921 to 1926, Pardee served as rotary driller for Union Oil Company of California in the Santa Fe Springs, Long Beach, Dominguez, Athens and Rosecrans fields. In the fall of 1926 he was employed by Turkish Petroleum Company, Ltd., now Iraq Petroleum Company, as a tool pusher in Iraq. He served in this capacity until the spring of 1928, when he was promoted to the position of assistant to the general superintendent in charge of all operations. He served in this position until

KENNETH D. PARDEE

he returned to the United States in June, 1929. In August, 1929, he joined The Texas Company as district superintendent in the Wyoming-Montana division, a position he has held until his resignation.

J. R. MUNOZ, New York City, president of Petroleum Finance Corporation, large property owner in the East Texas field, and also head of The Santa Fe Corporation, joint owner of the Rattlesnake field, New Mexico, with Continental Oil Company, visited the Dallas operating headquarters of the former corporation early last week.

JULIUS FOHS, president of Fohs Oil Company, Houston, is in New York on business. He will return by Baltimore, Maryland, where he will spend several days with his daughter who is attending school.

ALEX W. McCOY, pioneer Oklahoma geologist and independent operator, discussed, "Sand Reservoirs", at a joint meeting of the Oklahoma City, and Shawnee Geological Societies and the University of Oklahoma chapter of Sigma Gamma Epsilon at Norman, Oklahoma on Monday evening, April 8.

HARRY HINES, Wichita Falls oil operator, Friday was appointed chairman of the State Highway Commission by Governor James V. Allred. He succeeds former Judge W. R. Ely. Hines resigned as vice president of the Deep Oil Development Company to accept the appointment. Directorships in other oil companies will probably be retained. The new highway chairman was born in Rich Hill, Missouri in 1896, but has been a resident of Wichita Falls since 1922.

DR. A. H. MEHTIEFF of Moscow, petroleum engineer for Glavneft, the administration organization of the Soviets, announced in Houston this week he would be leaving for Russia in two months. He will go from the Gulf Coast to Oklahoma to continue his study of drilling against pressure.

SAM ARRENDALE, 69 Arkansas oil producer, died April 7 in the War Veterans Hospital at Hot Springs Park, Arkansas. He was a veteran of the Spanish-American War. While operating in Oklahoma he assembled the wildcat drilling block that led to the discovery of the El Dorado, Arkansas, field, and amassed a fortune from the boom that followed. Funeral services were held at El Dorado April 11.

Interesting Papers *on Drilling and Production* Feature A. P. I. Meeting

BRAD MILLS, *Associate Editor*

Amarillo, Texas.—The potentialities and present importance of the Texas Panhandle were featured at the Spring Meeting of mid-continent section of the American Petroleum Institute, Division of Production, held here April 10 and 11. A number of interesting papers touching on more general developments in drilling and production also were delivered.

During the discussion following a prepared paper, it was brought out that the Texas Panhandle ultimately should produce from 25 to 30 trillion cubic feet of gas. It is considered the greatest gas reserve in the world. Oil production has been about 240 million barrels and the known future reserves have been estimated at from 250 million to 400 million barrels.

Colonel E. O. Thompson, chairman of the Texas Railroad Commission, was unable to attend the meeting because of a throat infection and J. O. Guleke, member of the State Board of Education, substituted for Thompson. He viewed with suspicion the growing tendency of the federal government to interfere with state rights. He emphasized that states should preserve their sovereignty.

In a gestured paper Wednesday morning, Dr. Chas. N. Gould, director of the Oklahoma Geological Survey, discussed the "Discovery and Early History of the Panhandle Field." He is considered the dean of Panhandle geologist and discussed the work of his early field parties prior to the discovery of oil or gas. He stated that Theodore Roosevelt was largely responsible of the work through the Reclamation Act in 1902. It also was brought out that in a geological paper read in 1923 a well known geologist had said that companies should think twice before investing in the Panhandle area.

The Wednesday afternoon session was given over to phases of production not well understood by the average oil man. "The Manufacture and Use of Carbon Black," a paper by H. W. Price, E. D. Reinhold and R. G. Allen told of the use of enormous quantities of natural gas for a comparatively new purpose. It was shown that about one and three fourths pounds of carbon black are obtained from each thousand cubic feet of gas processed. In every set of tires for ordinary cars, the carbon black content is about 12½ pounds. The Texas Panhandle manufactures about 76 percent of the world's carbon black. Another paper that attracted wide attention was "Helium from a Scientific Curiosity to Large Scale Production," by C. C. Anderson, associate chemist, U. S. Bureau of Mines, Amarillo. An interesting sidelight was that helium was discovered in the sun before it was found on the earth. The Amarillo helium plant has been for years the principal source of helium in the world.

The Thursday session started with a paper by M. J. Norrell, director of industrial relations, Magnolia Petroleum Company, entitled "A Job in the Petroleum Industry." This paper discussed compensation continuity of service, sick benefits, working conditions, retirement pay and other phases of a workman's life. "Pressure Drilling," a paper by S. S. Parker, general manager of Doheny Stone Drill Company of Texas, was well received. A paper on "Controlled Directional Drilling," by J. D. Hughes, president of Eastman Oil Well Survey Company of Texas, told of various applications of the practice. "The Relation of Bottom-Hole Pressure to Production Control," by D. L. Katz and W. H. Barlow, Phillips Petroleum Company, showed how bottom-hole pressure measurements assist in producing crude oil more economically by decreasing the equipment investment and by making reserve estimates of oil and gas more reliable.

A feature of the Thursday afternoon session was the address by Harry H. Woodring, assistant secretary of war, on "National Defense." In this address the position of the oil industry in the national defense plan was shown.

The last two papers read Thursday afternoon discussed operations in the Fitts pool. The first was "drilling and Production Problems in the Development of the Fitts Pool," by K. R. Teis, of E. H. Moore, Inc. While the second was "Preventing Loss of Circulation and Cement in the Fitts Pool," by C. P. Parsons, Halliburton Oil Well Cementing Company, and H. L. McQuiston, Phillips Petroleum Company. These papers explained a number of formation problems encountered in the field.

Other papers presented during the meeting were "Geology and Development of the Panhandle Field," by the Panhandle Geological Society, and "Panhandle Drilling and Use of Miller Head in Balancing Gas Pressure," by H. E. Rodgers, consulting geologist.

The meeting was opened with an address by Ross D. Rogers, mayor of Amarillo. C. O. Rison, Indian Territory Illuminating Oil Company, presided at the Wednesday morning session, E. L. Bell, Deep Rock Oil Company, at the Wednesday afternoon session, A. J. Ritchie, Derby Oil Company, at the Thursday morning session and H. L. McQuiston, Phillips Petroleum Company at the Thursday afternoon session.

NEW A. P. I. OFFICERS

The following officers were elected for the ensuing year at the spring meeting of the Mid-Continent section of the American Petroleum Institute Division of Production:

J. C. Johnston, district superintendent, Continental Oil Company, Borger, Texas, chairman.

T. J. Hamilton, Phillips Petroleum Company, Great Bend, Kansas, vice president.

M. W. Birmingham, Indian Territory Illuminating Oil Company, Oklahoma City, vice chairman.

C. A. Daniels, Phillips Petroleum Company, Borger, Texas, vice chairman.

C. A. Hallowdy, Lee C. Moore Company, Wichita, Kansas, secretary-treasurer.

United North and South Placed in Receivership

Austin.—The United North and South Development Company was ordered into receivership April 9 by Judge J. D. Moore in the 98th District Court. The action was the result of a suit filed by Attorney General William McCraw, seeking to collect $18,618 allegedly due as delinquent franchise taxes. W. Dell Walker was appointed receiver for the concern. The petition filed by Assistant Attorney General W. W. Heath alleged that the concern, a Delaware corporation, was insolvent, and that shutting down its wells would result in water intrusion and consequent loss of recoverable oil. It was also stated that the Secretary of State had cancelled the firm's permit to do business on April 5. A temporary injunction was issued forbidding Edgar B. Davis and other agents of the company from interfering with the operations of the properties by the receiver.

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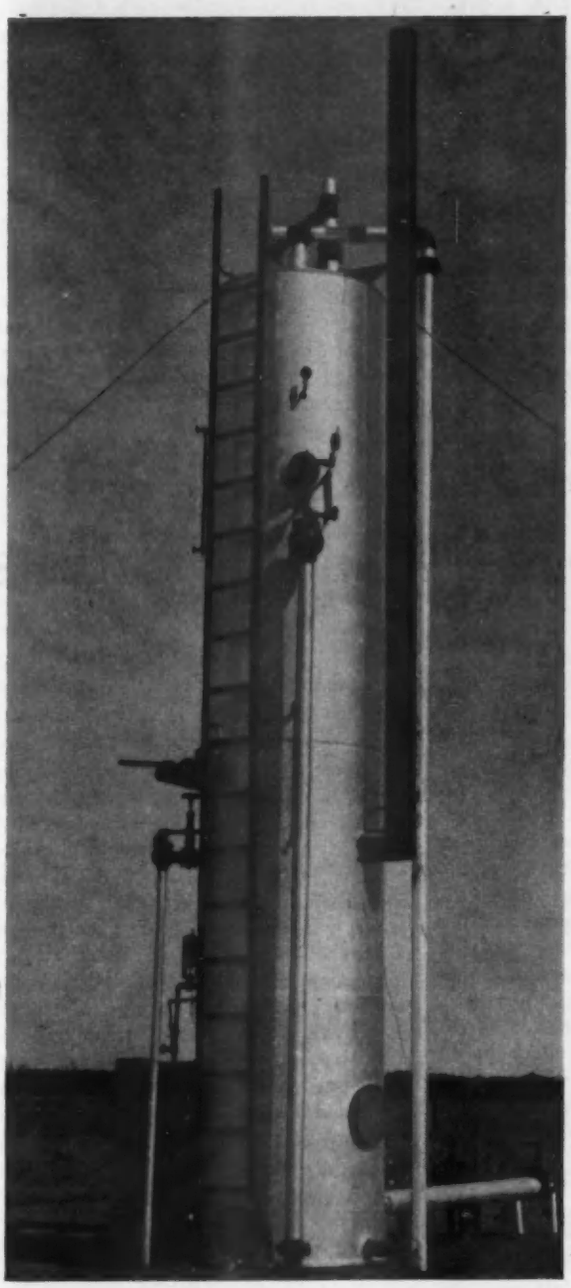

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Three Oil Bills *on Operating Problems Pass* Kansas Legislature

Wichita, Kansas.—The recent session of the Kansas legislature demonstrated its interest in the conservation of natural resources with the passage of three bills designed to supplement and expand conservation efforts made possible through previous legislation. As a result the state will have one of the most comprehensive plans of any of the oil producing states. Senate Bill No. 195, dealing with the plugging of wells; House Bill No. 278, dealing with repressuring; and House Bill No. 280, dealing with the return of salt water into wells; were the subject of a public hearing held here on Friday evening, April 12, upon call of Homer Hoch, chairman of the corporation commission.

For purposes of administration and fair enforcement of the various conservation laws the state has been divided into five producing districts as follows:

District 1—Johnson, Miami, Franklin, Linn, Anderson, Bourbon, Allen, Crawford, Neosho, Wilson, Cherokee, Labette, Montgomery and Chautauqua, a total of 14 counties.

District 2—Osage, Coffey, Woodson, Lyon, Greenwood, Elk, Chase, Butler, Cowley, Harvey, Sedgwick, Sumner, Reno, Kingman, and Harper, a total of 15 counties.

District 3—Doniphan, Atchison, Wyandotte, Leavenworth, Jefferson, Brown, Jackson, Shawnee, Nemaha, Marshall, Pottawatomie, Wabaunsee, Morris, Geary, Riley, Washington, Clay, Dickinson, Marion, McPherson, Saline, Ottawa, Cloud, Republic, Jewell, Mitchell, Lincoln, Ellsworth and Rice, a total of 29 counties.

District 4—Stafford, Pratt, Barber, Pawnee, Edwards, Kiowa, Comanche, Hodgeman, Ford, Clark, Gray, Meade, Finney, Haskell, Seward, Kearney, Grant, Stevens, Hamilton, Stanton and Morton, a total of 21 counties.

District 5—Smith, Osborne, Russell, Barton, Rush, Ellis, Rooks, Phillips, Norton, Graham, Trego, Ness, Lane, Scott, Gove, Sheridan, Decatur, Rawlins, Thomas, Logan, Wichita, Greeley, Wallace, Sherman, and Cheyenne, a total of 25 counties.

The low provides for the election of five committeemen from each district to be elected by vote of the individuals, companies, co-partnerships, or associations and their representatives, each owner and operator or their representatives to have one vote and in addition thereto one additional vote for each $100 or fraction thereof which said voter shall have paid in accordance with the last corporation commission proration fund assessment. The chairmen of the districts will act in an advisory capacity in all matters pertaining to the repressuring of oil and gas wells, the return of salt water to the formations, the plugging of oil and gas wells and the conservation of gas. Upon any problem in which any committeeman or chairman is financially interested, or upon which any corporation, co-partnership, association or individual by whom he is employed, is financially interested as a party, such committeeman shall not be entitled to vote.

The manner of casing off water overlying or underlying oil and gas bearing horizons, protection of fresh water horizons, notice of intention to abandon, reports of abandonment, notice of removal of material from a lease, notice of sale, assignment, transfer, conveyance or exchange of wells, notice of purchase of wells, keeping of accurate well logs and the filing of bond where necessary in the judgment of the corporation commission, are other provisions of Senate Bill 195. The other two bills go into considerable detail regarding repressuring and the return of salt water to formations but leave administration to the corporation commission.

Texas Truck False Billing Decision Upheld

Austin, Texas.—The Court of Criminal appeals last week affirmed the judgment of a Gregg County District Court in holding guilty J. W. Sparkman. The defendant was convicted of transporting motor fuel by truck under a false billing.

The record of the case allegedly indicated that Sparkman operated a truck which had been enlarged so that it would hold more gasoline than was shown on the manifest.

Houston Show *Was Featured by Optimism and* Good Exhibits

Houston.—The Sixth Annual Oil Equipment & Engineering Exposition at Convention Hall, Houston, came to a close Saturday, April 13, 1935.

The show carried further than ever before the aims toward making it both educational and entertaining. The combination of practical application and technical development was presented to as great an extent as possible to aid the oil man in using equipment most efficiently. A considerable number of the tools and materials were in operation and many were demonstrated to show their application under field conditions.

The technology of oil finding, drilling, producing, transporting, refining and marketing has progressed steadily during the past several years. New methods have required different types of equipment and likewise new instruments have brought about the adoption of operating practices heretofore foreign to the oil industry. These new devices were featured at the show, and the interest displayed by oil men desiring to learn more about them forecasts many changes of improved nature for the petroleum industry. The equipment and supply companies displayed these newly designed instruments on an elaborate and extensive scale.

While new equipment and its possible use were of principal importance one could not help but be impressed with the spirit of optimism that prevailed. The industry is moving forward toward pronounced improvement and oil operators and companies are commencing construction programs for the immediate future. With the big flush producing fields of the nation curtailed effectively and showing signs of passing definitely into artificial producing stage, wildcatting is on the increase so as to replenish the reserves that now are generally admitted to be inadequate for future needs. The industry is in a much better statistical position than it has been in a number of years with output lower and consumption increasing.

According to E. G. Lenzner, general manager, the oil show was one of the most successful in its history. All branches of the petroleum industry were covered. Equipment and methods were shown for drilling production, refining, pipe lines, gas plants, other transportation operations and for marketing refined products.

There were more than 300 exhibitors showing their equipment at the show. The largest amount of floor space was

(*Continued on page 48*)

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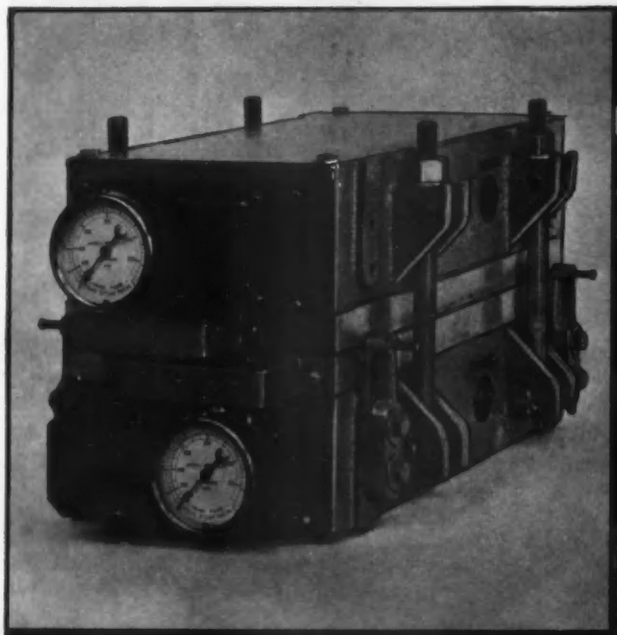

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● *Another view of a band-wheel power, driven by Endless Highflex.*

● *Endless Highflex Belt on a central pumping power unit in Pennsylvania.*

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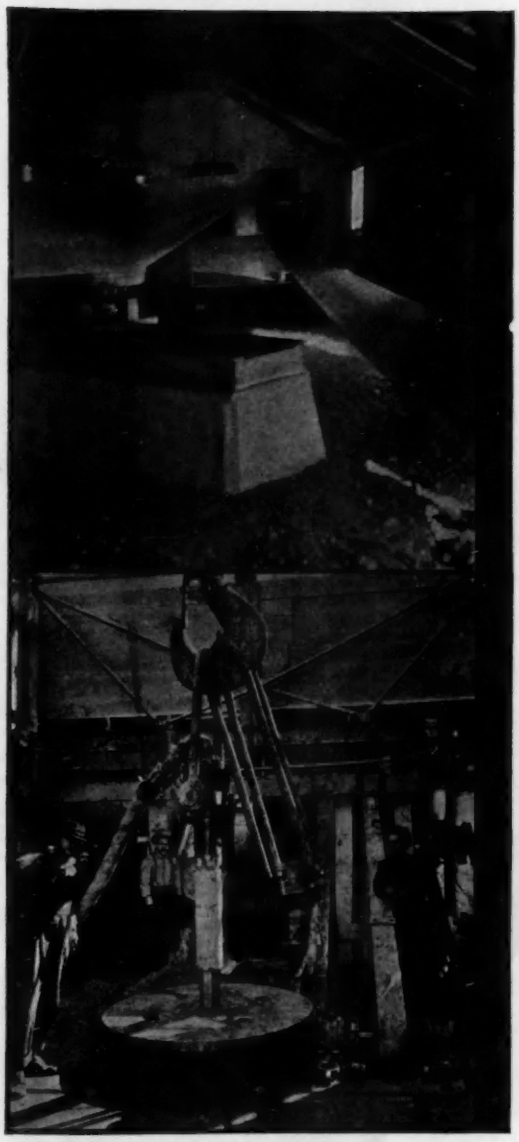

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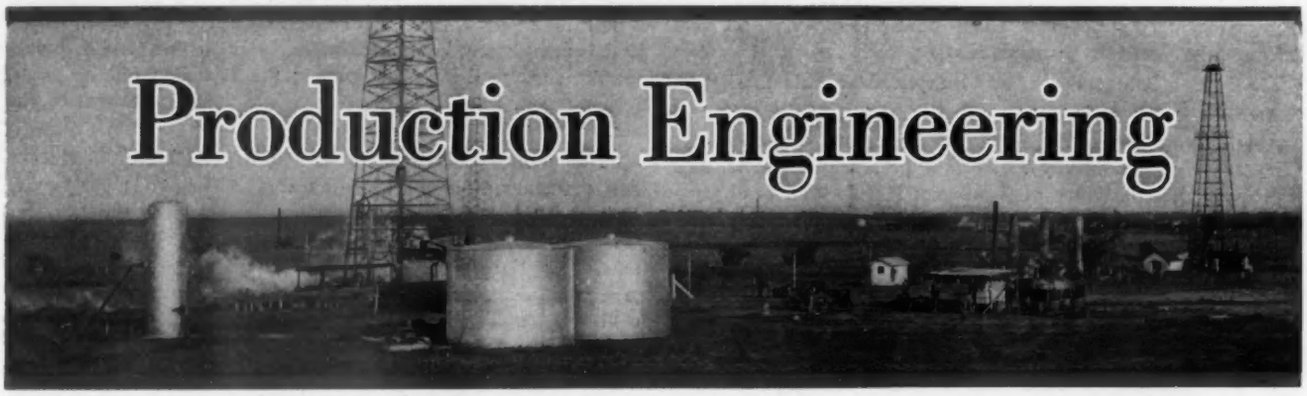

Pressure Drilling . . .

S. S. PARKER

General Manager, Doheny Stone Drill Company of Texas, Houston, Texas

SUB-SURFACE pressures may be divided into three classes, abnormal, normal and sub-normal.

Abnormal Pressures

Pressures encountered in any well bore at various depths which require the operator to maintain a fluid head or hydrostatic pressure in excess of that which may be normally maintained by the use of a circulating fluid or drilling mud made from natural shales or clays only may be classified as abnormal pressures.

In most cases slightly abnormal pressures may be most efficiently controlled by changing the character of the fluid column. There are a few cases on record of highly abnormal pressures where the maximum changes of characteristics of the fluid column were either inadequate or impractical.

This paper will briefly record the most essential facts in connection with the drilling of wells where abnormally high formation pressures were successfully and most efficiently controlled without changing the characteristics of the circulating fluid column.

Such work was accomplished with the use of equipment especially designed for the conventional drilling of oil and gas wells by the rotary method and, in addition, has coordinated auxiliary parts which allow the operator to use circulating fluid made from natural shales or clays only (or, if desirable, water) which will have a bottom hole pressure equivalent to a fluid head of from 0.200 to 2.375 pounds per foot of height or a weight of from four pounds per gallon to 48 pounds per gallon. Furthermore, such a change in fluid head may be made almost instantaneously.

The first attempt to successfully use mechanical equipment for controlling abnormal sub-surface pressures was in California. This company started operations in the Lost Hills field and had sufficient difficulties to cause the skidding of the first rig. On the second hole, No. 1-A 11¾-inch casing had been set at approximately 1900 feet; upon reaching a depth of 2057 feet a 20,000-barrel flow of hot salt water was encountered. Attempts were made for 30 days to drill deeper which entailed an expenditure of $30,000. No progress having been made at the end of this period of time they decided to resort to the use of mechanical equipment which consisted of a hydraulic rotary with automatic slips, external flush drill pipe, combination packer or blow-out preventer and pull down yoke.

With this equipment they immediately learned that, in addition to a hole full of 11-pound mud, it required a well head pressure of 600 pounds per square inch to balance the bottom-hole pressure. By maintaining a constant well head pressure of 650 pounds they were able to push the hot salt water away from the hole with the circulating mud at the rate of about 50 barrels per day.

Drilling operations progressed quite satisfactorily; new hole was made and cores were taken.

Upon reaching a depth of 3657 feet a gas zone was penetrated. The gas pressure at this lower depth was in excess of the water pressure at 2057 feet as all the circulating mud was blown out of the hole at the latter depth by the gas most recently encountered at 3657 feet.

The drill pipe was removed from the hole, the master valve closed and then the drill pipe packer replaced by an 8⅝-inch casing packer. 3657 feet of 8⅝-inch external flush casing was run in the hole, set and cemented under pressure.

Drilling progressed, other pressures were encountered, and,

THIS paper, which describes the progress of pressure drilling in oil fields of the United States, was presented before the Spring Meeting of the Mid-Continent District of the American Petroleum Institute Division of Production at Amarillo, Texas, April 10 and 11. The views expressed in the paper are solely those of the author and do not necessarily represent the thoughts of THE OIL WEEKLY editorial department.

later, a string of 6⅝-inch flush joint casing was set and cemented against 900 pounds pressure.

The hole, a non-producer, was completed at a depth slightly in excess of 5400 feet.

Another company in California used pressure equipment for the control of abnormally high-water pressures on their first well in the Middle Dome at Kettleman Hills. Well head pressures of 1500 pounds in addition to a column of fluid of nine and one half-pound mud were constantly maintained.

Another interesting use of pressure drilling equipment was for the killing of wells which had blown out and had been capped. These jobs were abnormal in that the casing head pressures were in excess of 1200 pounds. The flow connections were considered unsafe and therefore it was particularly desirable to kill the wells, without an increase in pressure on the top hole connections. Two jobs of this type were most successfully completed by another company in the Kettleman Hills field. Another company in the same area had a string of 3½-inch A.P.I. drill pipe in the hole, the top of the drill pipe, box up, being at 1700 feet. Pressure drilling equipment was rigged up in the derrick on a specially constructed steel framework to permit the installation of the packer on top of the existing connections. Flush joint drill pipe was run in the hole through the packer and screwed into the A.P.I. drill pipe which had been left in the hole when the well blew out. Circulation was thus established to the bottom of the hole and the well killed immediately without increasing the pressure on the surface connections.

Another well in this field was killed in a similar manner with the same equipment.

A striking example of the use of pressure drilling equipment for blow-out prevention was that experienced by a company in the Big Lake field. This experience is very well described in an article written by E. V. Foran and published in the April, 1933, issue of The Petroleum Engineer. We quote, in part, from this article as follows:

"With the drill pipe out of the hole the well was subjected to a production test and about 12 hours later bridged in the 7⅝-inch casing about 800 feet below the surface, the bridge extending over a 200-foot section of the 7⅝-inch casing.

"This condition made a dangerous high-pressure hazard, as almost the full pressure (2500 pounds) of the 8200-foot pay would naturally be effective against the base of the bridge, and should the bridge be drilled through without first approximately equalizing the pressure on the bridge, it would obviously be a threat to the safety of the entire rig. It was, therefore, proposed to run a drill pipe with the bit back into the hole and drill out the bridge with mud under a back-pressure of about 1500 to 2000 pounds on the circulating return chokes, in which case the puncturing of the bridge would not result in severe pressure impact on the equipment at the surface as the pressure at 800 feet, under these conditions, would be not less than 2400 pounds per square inch. Before drilling the bridge, however, all equipment on the derrick floor, cellar, manifold and vent lines was securely anchored and lashed to withstand the expected strain. While no accurate pressures in the 8200-foot pay have yet been ascertained, it has been clearly indicated that the formation pressure of this pay in other wells is not less than 2500 to 2800 pounds per square inch. An attempt was made, therefore, to circulate mud while holding a high back pressure on the return chokes, but as these had to be pinched to a small opening in order to assure a pressure of more than 1500 pounds at the surface, it resulted in the chokes themselves becoming bridged. Obviously, this system was impractical and the bridge had to be drilled without restricting the circulating returns and risk all the attendant hazards of the impact of high-pressure gas on the surface equipment at an unexpected moment, for the exact location of the base of the bridge was not known. The bridge was, therefore, drilled very carefully for two days and, without any warning, broke loose with terrific impact on the surface drilling equipment, the manifold on the circulating return lines, and the 8-inch line venting the gas to the air.

"The pressure observed on the wide-open manifold lines a few moments after the blow-out was 1600 pounds per square inch and about three minutes after the blow-out the pressure was still 1200 pounds on a wide-open four-inch manifold line leading to the emergency vent line, which was of eight-inch pipe and about 150 feet long. Although the strain on the equipment must have been severe, there was no leakage of gas in the cellar or at the derrick floor. At the moment of the impact the 800 feet of 3½-inch drill pipe was in danger of being blown from the hole, but upon the first movement of the drill pipe upward the automatic slips engaged in the reverse position, thus confining the total movement of the drill pipe to only nine of ten inches, at which point the drill pipe was rigidly held and as the well pressure increased the drilling packer automatically tightened around the drill pipe, preventing any gas leakage either below or above the derrick floor. After the pressure subsided an examination was made of all fittings and equipment and as nothing was observed to be deranged or disturbed drilling was resumed."

Another company in South Texas was the first to use pressure drilling equipment for blowout prevention in the Gulf Coast. On their properties at McFaddin, near Victoria, they had three blow-outs. The first well was capped and drill pipe left in the hole; the second and third wells cratered. Two relief wells were drilled with pressure equipment to comparatively shallow depths. The blow-outs occurred from a gas zone at approximately 3200 feet. Sands were charged at approximately 1200 feet, which charged sands had abnormal pressures for that depth. With pressure drilling equipment one gas well was completed as a gas well at 3200 feet and another well was successfully completed to 6800 feet. While drilling this latter well through the charged sand and the 3200-foot sand casing head pressures of 450 pounds, in addition to a column of 10½ pound circulating mud, were frequently recorded.

Another case of abnormal pressures occurred in Andrews County, West Texas. Pressures of 1700 pounds at 2500 feet and 1800 pounds at 2950 feet are being efficiently and satisfactorily controlled with the use of pressure drilling equipment. Two strings of casing, 8⅝-inch at 2840 feet and 6⅝-inch at 4200 feet have been set and cemented against casing head pressures of 750 pounds.

Normal Pressure

Pressure drilling equipment has been used extensively, in the Big Lake field in West Texas. The pressures encountered at the 8200 foot and lower levels are normal. The reasons for the use of this type of equipment for drilling into the Pennsylvanian lime and the Ellenberger lime formations are:

First—To prevent the penetration of the pay sections by the drilling fluid and thus injuring the productive ability of the well. It seems to be an established fact that a column of drilling fluid of either water or mud, if allowed to come in contact with productive lime formations, will greatly injure the productivity of the well. If pressure drilling equipment is used in conjunction with a light drilling fluid the well will start to flow shortly after entering the lime pay and may be allowed to continue to flow until the well is completed. Such a system insures maximum production from pay formations which may be mudded off, wholly or partially, by heavy drilling fluids.

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production of oil and gas with continued penetration. If the well is allowed to flow continuously while drilling into the pay formations the formation received as to the gas-oil ratio, gravity of the oil at various depths, exact locations of productive and non-productive sections, may be of particular value for determining the setting points of packers, perforated liners, or, at some future date, for the plugging back of wells as water encroachment takes place.

We have undoubtedly all heard of many blow-outs which have occurred from gas zones where pressures were normal. In some cases the pressure of the column of the drilling fluid at the bottom of the hole may have been considerably in excess of the reservoir pressure. The bit, when penetrating a few feet into the gas bearing formation, removes some of this formation containing gas, which formation and its contents are replaced by the circulating fluid. This volume of gas, even though it is only one cubic foot, moves up the hole in the circulating fluid. One cubic foot of gas at 10,000 feet moves up the hole slowly and expands at a very slow rate at first. At 1250 feet from the surface the gas which occupied one cubic foot at 10,000 feet occupies a volume of eight cubic feet and is rising and expanding at a much higher rate of speed. If this same gas should rise to 625 feet from the surface it would then occupy 16 cubic feet or approximately 80 lineal feet in seven-inch casing. Prior to this time mud would have undoubtedly been pushed out of the hole and the upward travel and expansion of the gas would be exceptionally rapid. When all of the fluid ahead of the gas had been expelled from the casing the rate of travel and expansion of the gas would be in the nature of an explosion. Conditions change so rapidly after the mud starts flowing out of the hole that there is a very short time interval in which to close valves or blow-out arresters.

In two specific cases, previously referred to in this paper, an automatic blow-out preventer, used in conjunction with external flush drill pipe, which is caused to function instantaneously by pressures encountered in the hole, has prevented blow-outs. The two cases referred to are the drilling of the bridge at 800 feet in the Big Lake Oil Company 8-C well and drilling through the charged sands on The Texas Company McFaddin 8 well.

Sub-Normal Pressures

A company in the Big Lake field also offers us an example of the use of pressure drilling equipment for sub-normal pressures.

Originally the pressures in the Ordovician lime were 3600 pounds per square inch, which pressures could be satisfactorily controlled by normal drilling fluid. After several wells were drilled and many thousands of barrels of oil produced, the pressures dropped to such a point that it was necessary to use a drilling fluid lighter than water to prevent the loss of drilling fluid into the producing formations and also to cause the well to flow while penetrating further into the productive zone. The system of introducing a few million cubic feet of gas into the circulating fluid between the pumps and the drill pipe, thereby causing the water to weigh approximately four pounds per gallon, was developed in this field in order to cope with the sub-normal pressures.

One interesting example of results obtained with an aerated or gassified circulating fluid column was the work done by Big Lake Oil Company on another well in this field.

This well was originally drilled before that company adopted pressure drilling in the Big Lake field. Mud was used for circulating fluid and the hole kept full at all times. While drilling through the Pennsylvanian lime, the pressure being only 1200 pounds per square inch, no sign of gas was detected. The well was drilled into the top of the Ordovician lime and produced water—while oil of from 62 to 65 gravity which was the gas cap overlying the black oil of 44 to 48 gravity. This well produced for over two years. When the well ceased to flow attempts were made to obtain further production by gas lift methods; those were unsuccessful and the well was dead for approximately three months.

During the flowing life of the well several other wells had been completed in the field and pressure drilling methods adopted.

The officials of one company in Big Lake decided to sidetrack above the Pennsylvanian lime and conduct drilling operations in the sidetrack hole with pressure drilling equipment in their dead No. 4-C well with the hopes of obtaining further production. Drilling operations were conducted with input gas in the circulating water, which fluid weighed approximately four pounds per gallon. Upon entering the Ordovician lime they found that this formation contained approximately seven million cubic feet of gas which had not made itself evident in the original hole. This gas was kept alive while drilling progressed into the top of the Ordovician lime. No gas or water-white oil was found in the upper part of this formation. Further penetration disclosed a large volume of black oil which had not yet been produced. The black oil did not have sufficient pressure to flow itself. However, it would rise above the Pennsylvanian lime and was flowed by means of the gas in the later and upper formation. This well was thus brought in from the side-track hole, making approximately 1200 barrels per day. It has produced for almost two years, the total production to date being in excess of 300,000 barrels of black oil, and it is still flowing at the rate of approximately 300 barrels per day. The total cost of the side-tracking job by pressure drilling equipment was $12,500.

The system of introducing imput gas or air into the circulating column of drilling fluid has been used in the Fitts pool near Ada, Oklahoma. K. R. Teis, chief engineer for E. H. Moore Company, will go into this subject in greater detail in a paper which he will present later.

Pressure drilling operations have been or are being conducted in the following Mid-Continent fields:

Lea County, New Mexico
Andrews County, West Texas
Yates Pool
Big Lake Field, Reagan County, Texas
Ward County, Texas
Fittstown, Oklahoma
Port Neches, Texas
McFaddin, Texas

There are four concerns which manufacture pressure drilling equipment. These four types of equipment either use a hydraulic rotary or hydraulic feed. They also advocate the use of external flush drill pipe and external flush casing. They supply either wire-line or hydraulic snubbing equipment. Two types of packers or blow-out preventers are advocated, either the gland type, which is manually operated and adjusted, or the automatic type which is caused to function by well pressures. Several types of back pressure valves are offered to the operators.

The use of pressure drilling methods and equipment is rapidly becoming more prevalent in the oil industry. There are many fields, where immediate benefit may be obtained in the form of reduced drilling costs, greater safety of operations, larger initial production, more intelligent systems of producing wells, and future benefits result from the valuable knowledge received in enabling the operator to more intelligently plug wells and appraise properties, if pressure drilling methods and equipment are used.

Relation of Bottom-Hole Pressure to Production Control

D. L. KATZ and W. H. BARLOW
Phillips Petroleum Company

BOTTOM-HOLE pressure measurements are shown to assist in producing crude oil more economically by increasing the ultimate recovery of oil, by decreasing the equipment investment, and by making reserve estimates of oil and gas reliable. Shut-in bottom-hole pressure measurements have been used to control production of water-drive pools in a manner such that the ultimate recovery is increased and the flowing life lengthened. Pressure measurements make it possible to predict lifting methods and oil and gas reserves on gas-drive pools. The decrease in bottom-hole pressure while pumping wells may be used to insure operators that the pumping equipment is suitable to any particular well.

This paper was presented at the Spring Meeting of the Mid-Continent District of the American Petroleum Institute Division of Production held at Amarillo, Texas, April 10 and 11.

THE study of bottom hole pressures has become of increasing importance since its beginning during the last decade. Many instruments have been developed and numerous articles written describing bottom-hole pressure measurements and utilization of this information.[1] The purpose of this paper is to discuss some of the present phases of activity in making bottom-hole pressures useful tools in the production of crude oil.

Pressure is the motivating force for the movement of oil into the well and is the chief regulating condition for the solution of gas in crude oil. Therefore any measurements of pressure in the process of removing oil and gas mixtures from producing formation to the surface is important information for interpreting the behavior of the mixture of oil and gas in the reservoir and flow string.

The statement that the bottom-hole pressure of a well is 500 pounds gives very little information unless one states that this is the maximum pressure a well would reach upon being shut-in or that the well was being produced at a known rate at the time of the measurement. This pressure also might have been taken during the time a well is being building up to its maximum and in this case would be useful only as one of the points of a curve showing pressure build-up with time. These three types of bottom-hole pressures will be referred to as shut-in or bottom-hole pressures, flowing pressures and build-up pressures, respectively. It is always necessary to indicate the level at which the pressure is measured or to which it is referred.

The major ways in which bottom-hole pressures assist in producing crude oil more economically are increasing the ultimate recovery, decrease in equipment investment, and estimation of oil and gas reserves. The specific applications of bottom-hole pressure information to these larger problems will be treated in two parts: natural flowing wells and wells produced by artificial lift.

Natural Flowing Wells

Oil wells flow by virtue of hydrostatic pressure or expanding gas energy. In the average flowing well, a combination of these two forces causes the well to produce. The gas energy may be supplied either from free gas or gas in solution in the crude oil. In the initial stages of the majority of flowing pools, the hydrostatic pressure is sufficient to lift the oil to the surface. As the pool develops and the pressure declines, it becomes necessary to more fully utilize the gas energy to maintain natural flow.

Three types of pools are generally recognized: water drive, gas drive, and combination pools. In water drive pools, the water displaces the oil as it is produced and may be utilized to maintain bottom-hole pressure. In gas drive pools, free gas or the gas coming out of solution from the crude oil with a reduction in bottom-hole pressure, forces the oil to the wells. Combination drive pools are really slow water drive pools in which the gas partially maintained bottom-hole pressure.

The value of shut-in pressures in controlling production is very different for the various types of pools. In water drive pools the rate of production should be controlled so that the bottom-hole pressures are uniform throughout the pool and so that the average bottom-hole pressure will not decline to a point where the wells will cease to flow. Irregular or high rates of withdrawal will cause the water to streak or cone to the wells causing the well to cease flowing at an early date.

Classical examples of water drive pools are East Texas[2], [3] and Hobbs[4]. At Hobbs the proration of the individual wells contains a factor which is based on bottom-hole pressure and which tends to equalize the field pressure by lowering withdrawal in low pressure areas. The pool has produced over 50 million barrels of oil and during recent period of 13 months has produced at the rate of less than two pounds drop in bottom-hole pressure per million barrels of oil. The periodic shut-in pressure tests made in this field have enabled the operators to understand the reservoir behavior and reach this ideal condition of production control. Bottom-hole pressures in East Texas have been useful in understanding the behavior of the reservoir and to predict reservoir pressure changes with various rates of production.

In controlled water drive pools, the chief value of this control is the increase in ultimate recovery of oil. The water purges the oil more thoroughly from the formation as the water level slowly rises than would occur if the encroachment were rapid and irregular. This increase in ultimate recovery is augmented by the low lifting cost of a long natural flowing life.

In combination fields the rate of water encroachment is so slow that it does not maintain the bottom-hole pressure when crude is produced at an economic rate. If the crude is satu-

rated at the reservoir pressure, any reduction of pressure will liberate gas to assist in producing the oil. In this case the pool is predominantly gas drive and will be considered under true gas drive. If the crude is saturated at some low pressure, then the reservoir pressure will drop rapidly with slow water encroachment until it reaches this saturation pressure, reaching the artificial lift period at an early date.

In gas drive pools shut-in bottom-hole pressures have two distinct uses: prediction of flowing life and estimation of reserves. The bottom-hole pressure decline is an indication of volumetric withdrawal and may be plotted against volumetric withdrawal or accumulated oil production. Figure 1 is a typical curve showing average bottom-hole pressure against accumulated oil production for Oklahoma City Wilcox zone. At any time the curve may be extended to give an approximation of the pressure to be expected after any given oil production. This pressure along with gas-oil ratio and characteristics of the well may be used to predict the time when the well will not make its production by natural flow. At Oklahoma City the average bottom-hole pressure at which wells ceased to flow was 462 pounds. This pressure was variable for the different wells, depending on gas-oil ratio, characteristics of the sand, and flow string used. It was found that some wells of 4000 cubic feet per barrel gas-oil ratio would flow with bottom-hole pressures as low as 300 pounds. Others, however, ceased flowing as high as 900 pounds bottom-hole pressure with 2000 cubic feet of gas per barrel as the sand was of low permeability. Estimates made using this decline curve materially aided in determining the time at which artificial lift would be necessary and the most suitable method to use. This estimate allowed an orderly installation of gas lift equipment in time so that there was no loss in production when the wells ceased to flow. Also this information showed that it was not necessary to make the investment of artificial lift equipment earlier in the life of the field. Although there has been some water encroachment, Oklahoma City Wilcox is predominantly a gas drive pool.

In pure gas drive pools, the reservoir volume occupied by gas and oil remains essentially constant throughout the life of the pool. This fact along with solubility data, bottom-hole pressures, and volumetric withdrawal makes it possible to estimate oil reserves by a method which is independent of sand volume method. In prorated fields, this pressure decline curve has somewhat replaced the production decline curve formerly used for ultimate recovery. These estimates of reserves in prorated fields play an important part in determining the investment and operating program for a pool.

The value of flowing bottom-hole pressures is that it gives a method of estimating relative capacities of wells without taking open flow potentials. Flow tests are made by measuring the drop in bottom-hole pressure at various rates of flow. These reductions in bottom-hole pressure along with well diameter and penetration may be utilized to calculate the effective permeability of the sand[6]. In this direction, Moore[6] suggested the use of Productivity Index or barrels produced per day per pound pressure drop as a method of proration to supplant open flow potentials. This method was thoroughly studied by the A. P. I. Allocation Committee[7]. Although the difficulties involved in adopting this method have been many, a tremendous saving in equipment could be made on pools in which it were substituted for open flow potentials.

Wells on Artificial Lift

Artificial producing wells may be of the type having a flowing life previous to pumping or wells artificially produced at

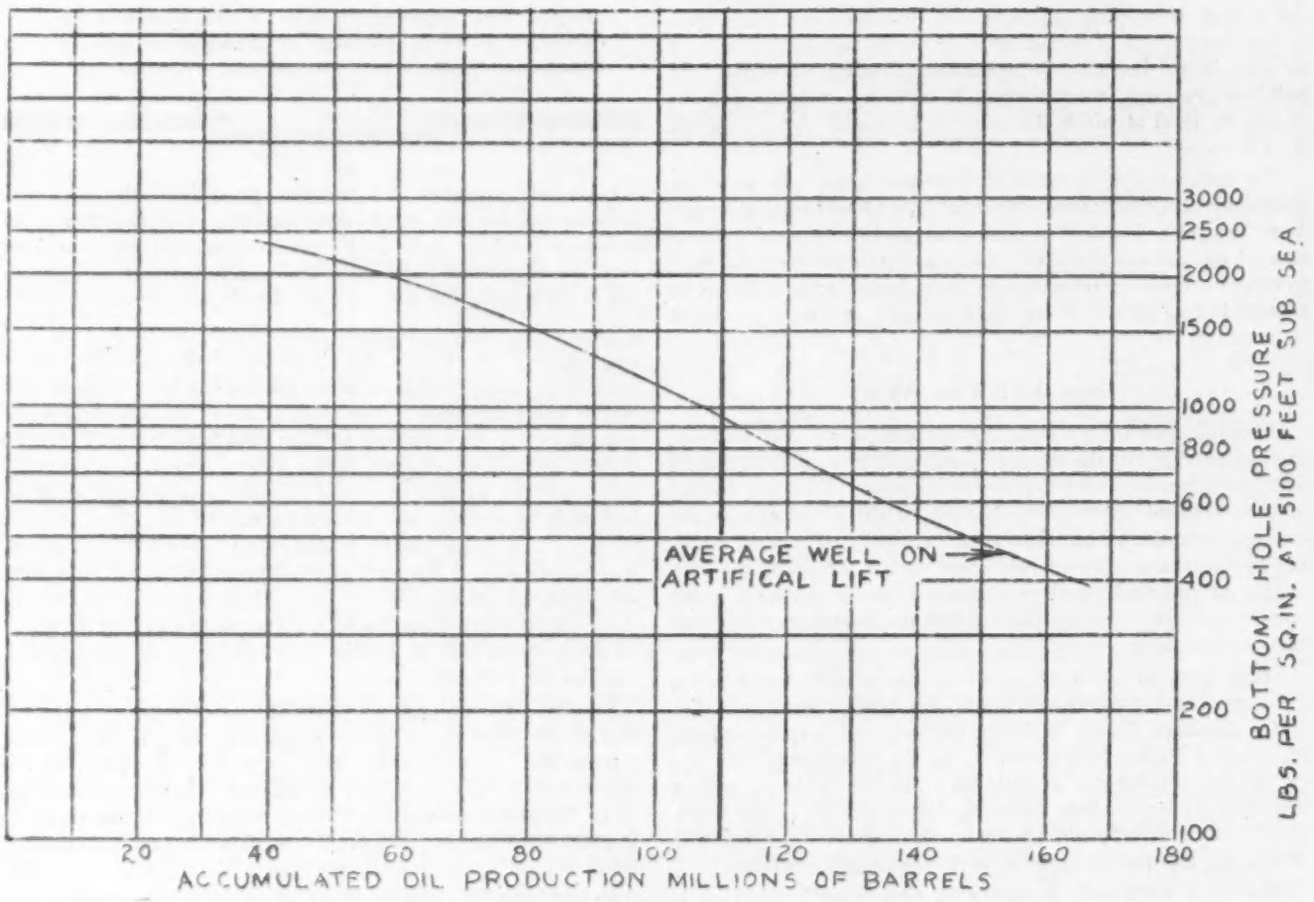

FIGURE 1
Pressure decline curve, Oklahoma City Wilcox zone

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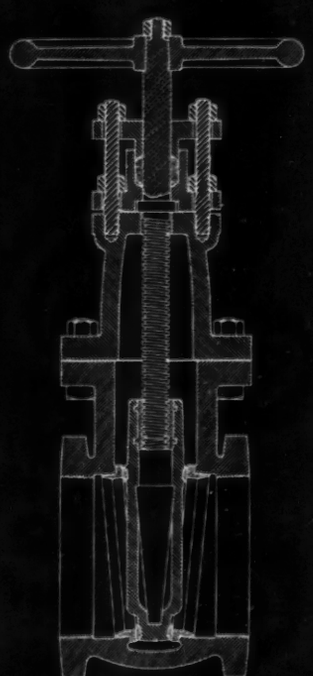

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initial production. Wells may have relatively high shut-in pressures such as 1000 pounds at 4000 feet depth and still require artificial production. The presence of water often is the cause for artificial lift as it increases the weight of the fluid column in the flow string, it is not adaptable to forming stable foam, and the gas-fluid ratio is usually lower. Also the oil may have practically no gas in solution and thus no lifting medium besides the hydrostatic head. In these cases artificial lift is necessary.

If a well which has a high shut-in pressure but very low producing capacity because of low sand permeability, the well no doubt would be operated as a pumper in order to get a reasonable production rate. This pumping allows the bottom hole pressure to be lowered and give a maximum pressure gradient to force oil to the well. However, if the oil contained gas, it is quite probable that the well could be flowed at low rates with a smaller flow string than is ordinarily used.

Bottom-hole pressures in pumping wells are generally synonymous with fluid head from which fluid levels may be estimated using gravity and temperature of the oil. As in flowing wells, the changes in the bottom hole pressure indicate the behavior of the reservoir fluid. In the water drive pools the shut-in pressure would indicate relative rates of production and water encroachment. In gas drive pools the shut-in pressure indicates the amount of gas still in solution and available for forcing oil to the wells. Also the pressure decline curve for prorated pumping pools may be used as mentioned previously for estimating ultimate recoveries.

In most pumping wells it is impossible to know whether the well is being produced at its maximum possible rate

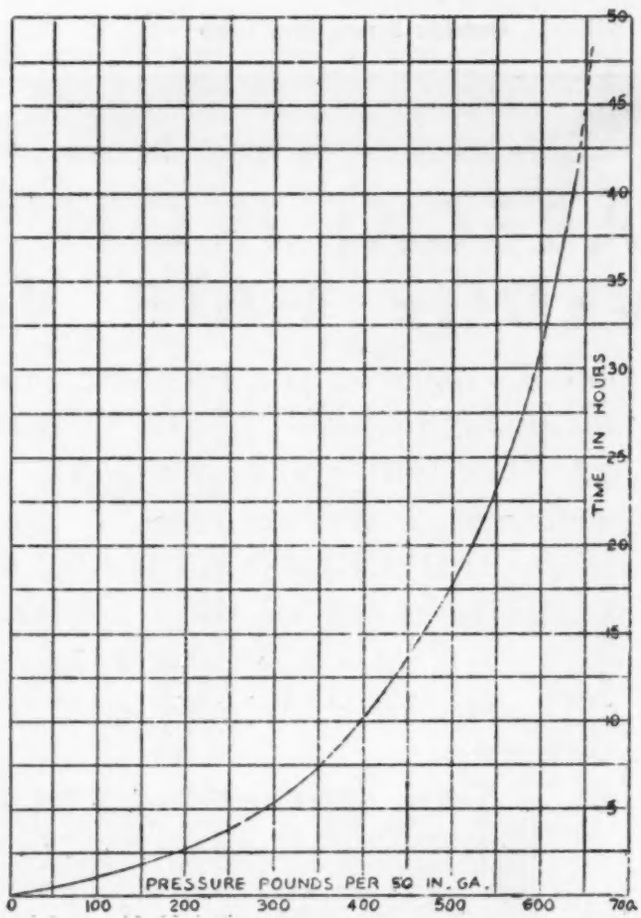
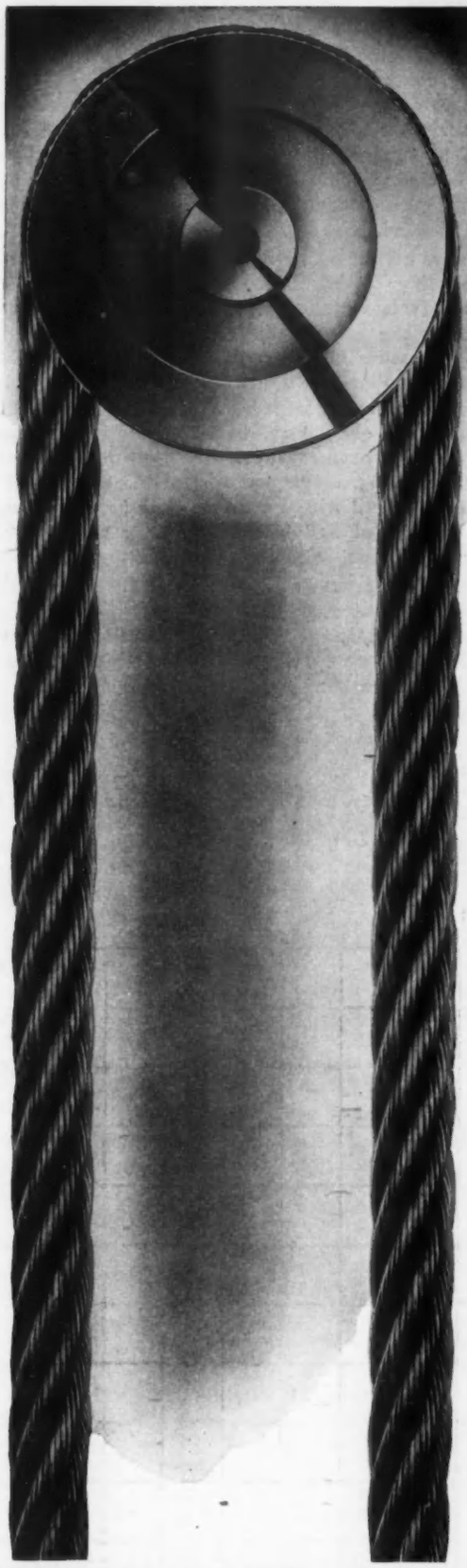


FIGURE 2
Pressure rise with time



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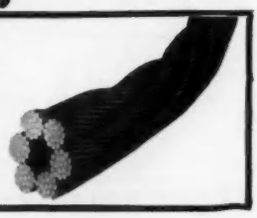

TABLE I

Calculation of Production Rate

Time in Hours	Bottom Hole Pressure Lb., per Sp. In.	Fluid Head Feet	Increase in Fluid Head per Hour Feet	Barrels per Hour	Average Pressure During Time Interval
0	0	0			
1	90	237	237.0	9.27	45.0
2	165	434	197.0	7.70	127.5
3	220	579	145.0	5.67	192.5
4	260	684	105.0	4.11	240.0
5	292	768	84.0	3.28	276.0
6	317	835	67.0	2.62	304.5
7	340	895	60.0	2.34	328.5
8	359	945	50.0	1.96	349.5
10	395	1040	47.5	1.86	377.0
12	425	1118	39.0	1.53	410.0
14	452	1190	35.5	1.39	438.5
18	501	1319	32.2	1.26	476.5
22	540	1420	25.2	0.99	520.5
26	570	1500	20.0	0.78	555.0
30	595	1565	16.3	0.64	582.5
34	612	1610	11.3	0.44	603.5
38	629	1653	10.8	0.42	620.5
42	643	1690	9.3	0.30	637.0

Fluid head of 100 feet equals 38 lb. pressure.
Fluid head of 100 feet equals 3.9 bbl. fluid in casing.

from operating records. Pressures measured at the bottom of the well while producing it will show how much fluid head is being held on the sand thus indicating the capacity of the well. By measuring these pumping bottom hole pressures at various pumping rates, a drawn down curve may be plotted showing capacity of the well. This method of operation is the equivalent of flowing pressures in supplying the data for Productivity Index which has been suggested for obtaining potentials of wells.

This procedure would be of considerable value as ordinary pumping equipment could be used for obtaining true potential on high capacity wells. Drawn-tests are of value as they would assure that all wells are being produced at maximum rate and the last oil from a pool is being recovered most economically.

In contrast to draw-down tests, build-up pressure curves may be measured on wells from which the fluid head has been removed by swabbing or gas lift. The rate of build-up of pressure is the measure of the rate of oil travel up the casing and this production is occurring against the increasing fluid head.

Figure 2 shows a build-up curve for a Rook County, Kansas, well producing 26° A. P. I. crude from the arbuckle lime. The well was swabbed down previous to the test.

Table 1 shows the calculations which are necessary to transform the pressure build-up curve of Figure 2 to the production curve of Figure 3. For instance from 165 pounds bottom-hole pressure to 220 pounds, the fluid head increased 145 feet which is the equivalent of 5.67 barrels in this casing. This production occurred over period of one hour and is plotted against the average pressure of 193 pounds. As the production occurred with a 500-foot fluid head, a pump pumping at the rate of 5.67 barrels per hour would have maintained the fluid level at 500 feet from the bottom. The actual swabbing rate is indicated on Figure 3 as 7.4 barrels per hour.

Variations of this test may be used to estimate actual pumping rates more accurately than swabbing thus eliminating these long tests.

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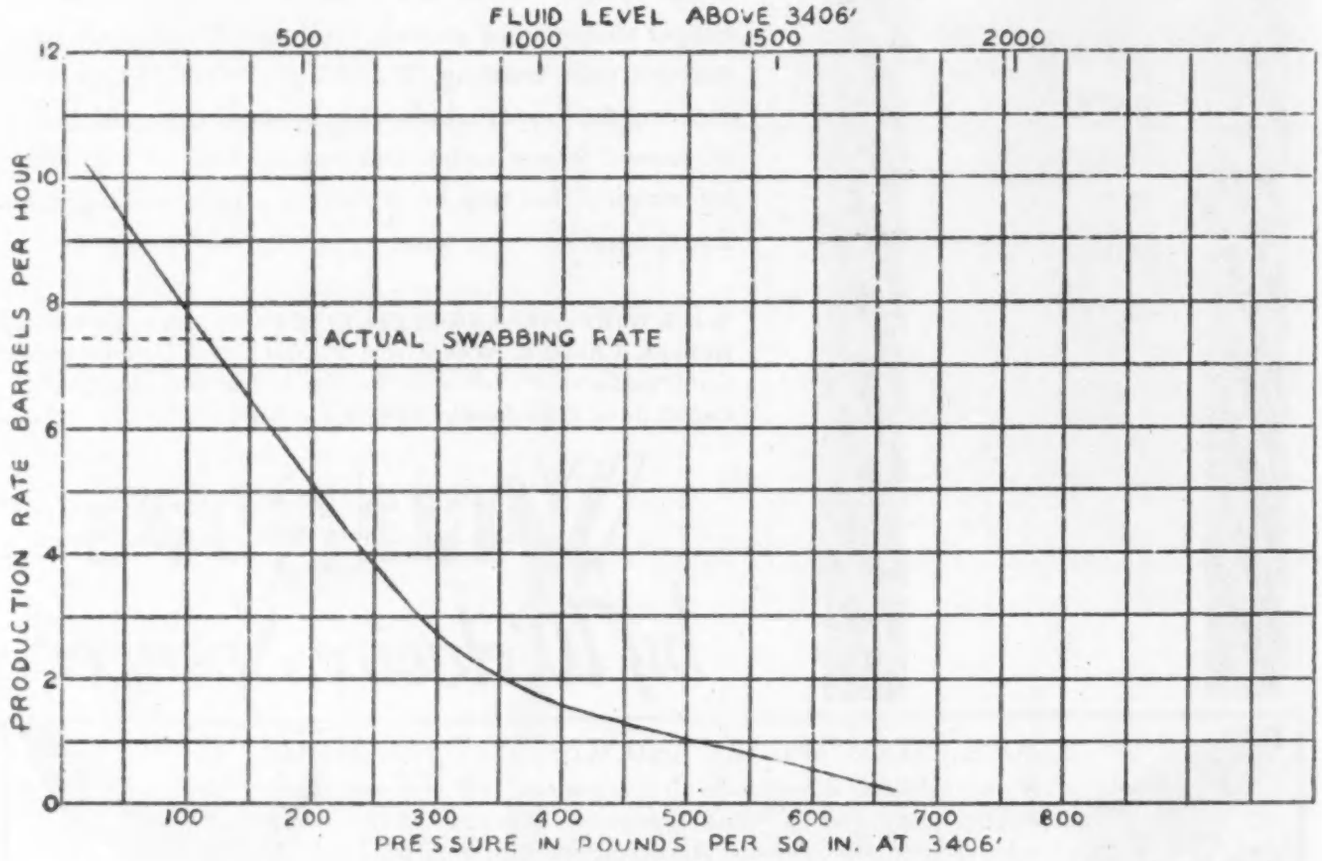

FIGURE 3

Calculated production rate from pressure built-up test

Preventing Loss *of Circulation and Cement in the* Fitts Pool, Oklahoma

C. P. PARSONS
Halliburton Oil Well Cementing Co., and

H. L. McQUISTON
Phillips Petroleum Company

THERE has been some loss of circulation and cement in tests drilled in the Fitts pool of Oklahoma. This paper describes steps that have been taken to overcome this bothersome problem, and is thought to represent a step forward. It was presented at the Spring Meeting of the Mid-Continent District of the American Petroleum Institute Division of Production held at Amarillo, Texas, April 10-11. The views expressed are those of the author and do not represent necessarily the viewpoints of this publication.

AMONG the drilling problems in the Fitts Pool located near Ada, Oklahoma, there is a double-barrel condition wherein supercharged shallow sands force salt water into the drilling mud on the least provocation while other formations do exactly the opposite by taking drilling mud and cement slurry out of the hole on the least provocation. Some wells are troubled by either one condition or the other, while other wells encounter both. There are four main effects of these troublesome formations, as follows:

1. Loss of circulation while drilling.
2. Inflow of salt water into the mud from supercharged shallow sands.
3. Loss of cement slurry into highly permeable formations while cementing casing.
4. Escape of gas from the shallow supercharged sands upward behind the casing.

It has been fortunate, however, that although the condition has been serious in some wells, making it difficult to reach the depth where the production string of casing is to be set, none have interfered with getting the proper protection to the producing formation by means of the regular water shut off behind the lower part of the production string of casing.

While there undoubtedly were a number of methods tried by various operators to overcome the difficulties, it is the purpose of this paper to describe the results of a joint effort between Phillips Petroleum Company and Halliburton Oil Well Cementing Company to carry out, both in the laboratory and in the field, the use of sealing materials, carefully selected as to ingredients and size, for overcoming the loss of circulation while drilling and loss of cement slurry while cementing.

While the use of sealing materials at Fitts has been successful in obtaining a seal on the face of the supercharged water formations against the entrance of fluid into the formations from the well, yet it was apparent that these formations were not sufficiently permeable to receive the fiber to the extent that a seal could be built up within the formation to prevent the inflow of salt water into the hole when the hydraulic pressure of the drilling fluid in the hole was unbalanced for some reason or other. For this reason, it appears that the supercharged salt water formations are not the same as the more permeable formations that cause lost circulation.

The loss of drilling mud in a thirsty formation is sufficient reason in itself for unbalancing the fluid pressure in the hole and allowing a salt water flow to start. Caving formations and settling out of the solids in the mud are some of the after effects of the salt water flow. The settling out of the solids in the mud by reason of the salt water flow lightening the upper part of the mud column in a number of instances has caused blow outs.

As to the loss of cement slurry in the highly permeable formations, it is apparent that these are the same formations that take drilling fluid during the drilling operation and, even though a regular mud seal may have been established by the mud particles against loss of drilling fluid under normal drilling fluid pressures, yet when it was attempted to place a large amount of cement above such a formation, the additional pressure imposed upon the formation to elevate the cement slurry after a certain amount of it had already passed the formation, was sufficient to break the mud seal and forced the rest of the cement slurry out into the formation instead of upward behind the casing.

As to the escape of gas from the shallow supercharged sands upward behind the casing, this condition was encountered in a number of wells and was apparently due to not being able to land sufficient cement behind the casing to cover up the supercharged formations.

It is believed that the best manner of overcoming the loss of circulation while drilling and thereby removing one of the main causes of salt water inflows and also overcoming the loss of cement slurry into highly permeable formations, which would also overcome the excape of gas from the shallow supercharged sands upward behind the casing, is to obtain an effective seal of those highly permeable, or so-called "thirsty" formations, as quickly as possible during the drilling operation.

A great deal of experimental work had been done with various materials prior to any actual use in the Fitts pool.

This experimental work included: 1. Selection of various materials, as to kind shape and size, that would be suitable for sealing; 2. Samples of permeable formations ranging from fine sand, up to very coarse gravel; 3. Mixtures of sealing materials and various drilling fluids; 4. Mixtures of sealing materials and cement; 5. Mixtures of sealing materials and oil; also, a number of other miscellaneous mixtures.

In mixing the sealing materials with drilling fluids, spe-

cial attention was given to determining their effects upon the physical properties of the drilling fluid, such as viscosities, gelation, weight, suspension, etc.; also their effects upon the pH value of the mud.

In mixing the sealing materials with cement, special attention was given to determining their effects on the physical properties of cement slurry, such as setting time, consistency, compressive strength, permeability, pH value, etc.

In addition to covering the effects of these sealing materials on the physical properties within the mixture, the experiments also included sealing tests wherein the different mixtures were applied under pressures from a high pressure pump into the face of a sample of permeable media. After each sealing test, the permeable media was examined for depth of penetration of the sealing material and the depth of the film built up on the surface of the media.

The materials used at Fitts were based on this experimental work and produced results on its very first use in that field that were very interesting and very successful, as follows:

The well had been drilled to 600 feet and losing a pit of mud every two hours. The mud went out into some formation, or formations, and some of it was oozing out of a creek bottom located several hundred feet from the well. One ton of the sealing material was mixed with the nine pounds per gallon mud in the circulating pit. This mixture was circulated in the hole with the result that the sealing medium was carried by the mud into the surface pores of the permeable formations and soon built up a seal. The mud quit oozing out at the creek bottom and there was a loss of only six inches of mud in the circulating pit during the time a complete seal was being obtained. The hole was drilled to 675 feet, the point selected for setting 13⅜ inch casing, without further difficulty.

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The second question about sealing then remained to be answered. That question was whether the seal already obtained would be sufficiently effective to allow the casing to be cemented from top to bottom, without losing any cement slurry.

The casing was run and cemented with regular cement slurry from top to bottom without the loss of any slurry or loss of returns at the surface, indicating that the sealing material had built up a seal within the highly permeable formation. Thus was completed a 100 percent successful performance on the very first use of the selected material at Fitts.

One result of a study of that job was an idea which appears to have a very important bearing on quickly overcoming the loss of cement slurry in formations in the Fitts pool and perhaps in other areas where similar problems exist.

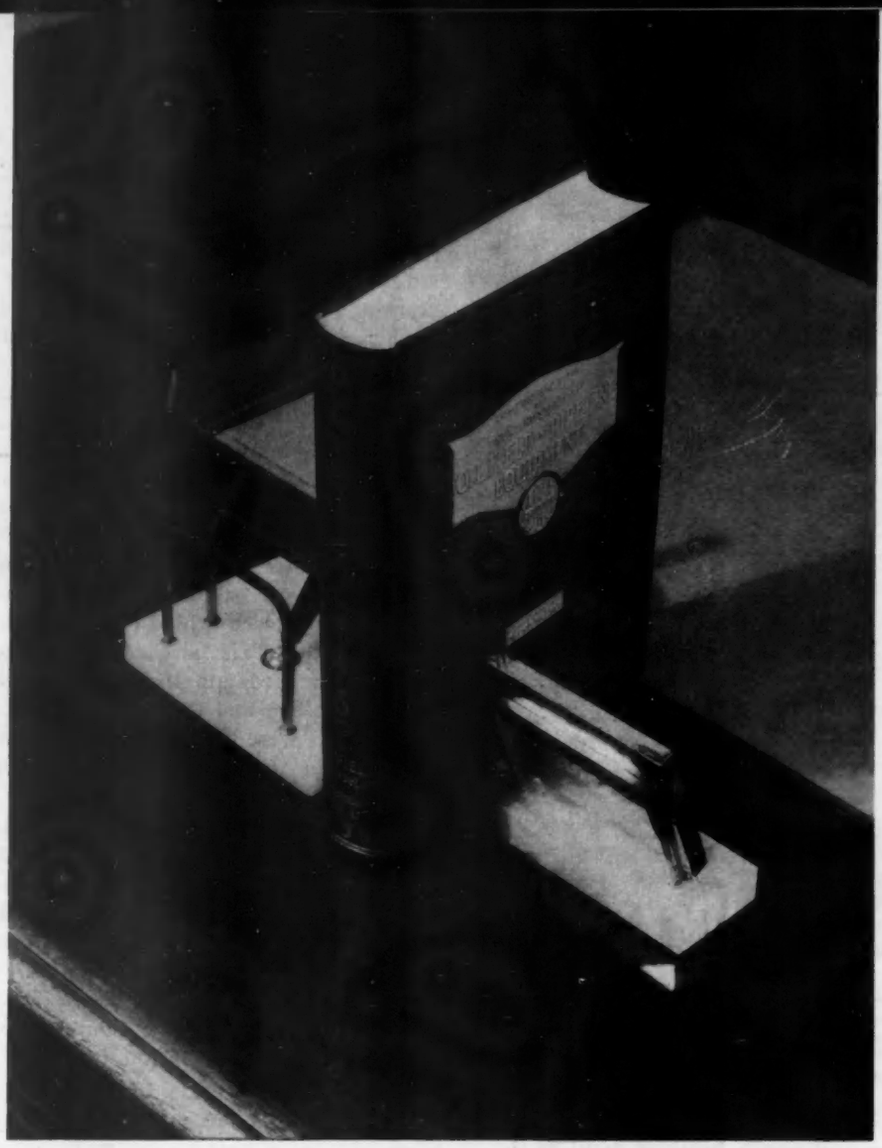
The idea, briefly, consists of drilling wells through those formations in which loss of drilling mud is encountered or in which it is felt that loss of cement slurry is likely to be encountered later, in the following manner:

Drill a limited amount of hole, like 25, 50 or 100 feet, unless some loss of mud is encountered sooner. Raise the drill stem until the bit is at the upper part of the limited section just drilled, close the blow-out preventer and apply at least 1000 pounds per square inch pump pressure on the mud fluid, either through the drill pipe or on the bradenhead in an attempt to break the seal normally established by the mud while drilling, but which may be later overcome by cement slurry when cementing. If the formations do not take mud under the pump pressure then release the pressure, open the blow-out preventer, lower the drill pipe and drill another limited amount of hole and repeat the application of pump pressure. If while drilling, or if in any of these pressure applications, a formation starts taking fluid, then a special batch of mud containing the sealing material can be pumped down through the drill pipe and the only place for the sealing material to travel when the blow-out preventer is closed, is into the "thirsty" permeable formation. The sealing material is pumped into the formation until a seal has been built up to withstand the pump pressure test. In operations of this type it would be economical and would facilitate matters to have an extra slush pit containing drilling mud with which the sealing material was already mixed.

The successive repeating of the pressure tests and sealing operations throughout any series of suspicious formations which cause the loss of mud fluid or cement slurry, would allow the drilling operation to be carried out with a minimum loss of mud, would reduce the salt water inflows, would allow the placing of a proper amount of cement slurry behind the casing to seal off the supercharged shallow sands and would prevent leakage of gas from the shallow sands into the space behind the casing.

Although the best time to obtain a seal of permeable formations is during the drilling of the formations, yet another effort has been carried on at Fitts whereby the sealing material was mixed with the cement itself in order to make the cement slurry "self-sealing" in case it started to go out into some formation. This self-sealing cement slurry was figured to be applicable to such cases wherein either a complete seal could not be obtained during the drilling operation or for some reason may not be considered advisable.

Up to the present time, nine strings of casing have been cemented in the Fitts pool with cement slurry containing sealing material. These strings of casing ranged from surface pipe down to production strings. They were cemented with a total of 5375 sacks of cement mixed with two per-



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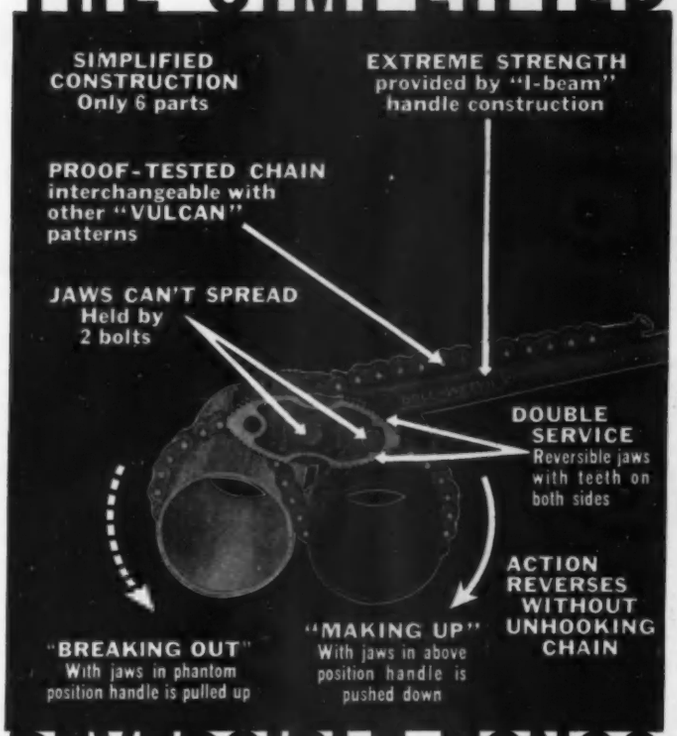
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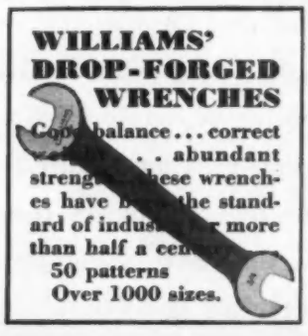

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cent (by weight) of sealing material, amounting to only 5⅜ tons. Each of these jobs was a success.

One of these jobs was especially interesting. A string of 9⅝-inch casing had been run to 2730 feet in the well and it was contemplated cementing this string from top to bottom. Theoretically, it would have taken 784 sacks of cement to fill the annular space behind this casing. However, by use of an indicator in the mud and measuring the mud until the indicator was pumped down through the casing and up to the surface on the outside of the casing, it was figured that it would take 800 sacks. Inasmuch as the operator anticipated loss of returns while the cement was being placed, 1000 sacks of cement, mixed with two percent of sealing material, was thoroughly mixed and pumped into the casing, followed by 50 sacks of neat cement without sealing material. The cement slurry averaged 14.8 pounds per gallon and at one time while it was being pumped into place behind the casing the returns were momentarily lost. The measuring line showed only 200 feet of fluid pumped into the casing between the time circulation was lost and the cement had completed a seal and the returns were back to normal, showing that the sealing material in the cement had successfully closed off the formation.

A few sacks of cement were intentionally left inside of the casing and an estimated total of 220 sacks were circulated out at the surface from behind the casing by the time the top plug reached its proper place, making a total of 835 sacks used to fill the space behind the casing and to obtain the seal. On the basis of 800 sacks to fill the space behind the casing, as shown by the indicator pumped in the mud prior to the cementing job, it appears that 35 sacks were consumed by the formation before the seal was complete.

As a result of this particular experience and other similar jobs, it is possible to more accurately estimate the amount of cement required, thereby eliminating the amount of cement that is pumped back out of the returns at the surface.

As to additional actual trials at Fitts, another well at Fitts was drilling in the Hunton lime at a depth of 3561 feet and experienced loss of circulation. One ton of the sealing material was mixed with the mud in the pits and pumped into the well with the result that complete circulation was regained. Two pits of mud had been lost just prior to the use of the sealing material. Small amounts of sealing material were added to the mud while they continued drilling through the Hunton lime and until they had reached the top of the Viola lime where a string of casing was run.

Another well in the Fitts pool experienced a loss of mud in the slush pit. The loss was stopped when one half ton of sealing material was added to the mud in the pit.

As a result of the successful use of the material in the Fitts pool, Phillips Petroleum Company used the sealing material mixed with cement in cementing 13⅜-inch casing in a well in Kansas located in an area where considerable trouble had been experienced in losing cement in the Dakota formation. The sealing material was added to the cement in the proportion of two percent by weight. This job has been reported as entirely successful.

It is believed that this work is a step forward towards eliminating lost circulation problems that have been very bothersome in the past. The work is being continued both in the laboratory and in the field.

Eastern Venezuela Expected to Become Major Producing Area

GEORGE R. PINKLEY*

PRESENT developments in Eastern Venezuela bring that portion of South America into active play. Although only one major oil field has been established thus far, wildcat showings in three widely separated areas indicate that this district will become a major factor in petroleum production.

THE past year has seen an unusual amount of activity in Eastern Venezuela, an area of considerable oil possibilities, which, until recently, has been left a closed book so far as geologic and geophysic knowledge has been concerned. Increase in work there is the result of several varied factors, chief of which is the prolific production maintained by the Quirequire field of Standard Oil Company of Venezuela. Also, a wildcat well 100 miles away showed a wet gas well. The fact that many concessions are reaching critical age limits also enters into the situation.

There has been little publicity about this part of South America, partly because so little work has been done that it would have been dangerous to make any positive statements. Outside of possible oil resources, there is little to arouse the popular interest in the country; only a few travelers have spent much time there.

Description of Country

Little of the country is a true tropical jungle. The delta of the Orinoco and adjacent rivers is a heavily wooded swampy area, but this covers less than 10,000 square miles. Along the western boundary of the country are the Andes, which divide south of Maracaibo Lake, one chain going northwest to Central America, to connect with the south end of the Rocky Mountains and the other chains swing east towards Caracas enclosing the Lake Basin, and continuing to the Island of Trinidad. These mountains along the north coast have much influence on the weather of the interior; several months of the year they stop all rain from reaching more than a few miles from the coast.

Another mountain region exists south of the Orinoco River, but these are so old geologically as to be worn to a few low hills, near the river. Toward the border of British Guiana, in the gold field area, the hills reach up to heights of 8000 feet.

Between these two mountain areas and the delta swamps, lies a geologic basin which is the center of the present attention. It is an area 125 miles wide, and at least 300 miles long, all of which is potential oil country. The eastern part is largely plains country, sandy areas with little more than grass on them known as the "Llanos." West, these break off into a clay area, very bushy in places, and well eroded. This is the "Savanna" country. Where water is available it makes an excellent cattle country.

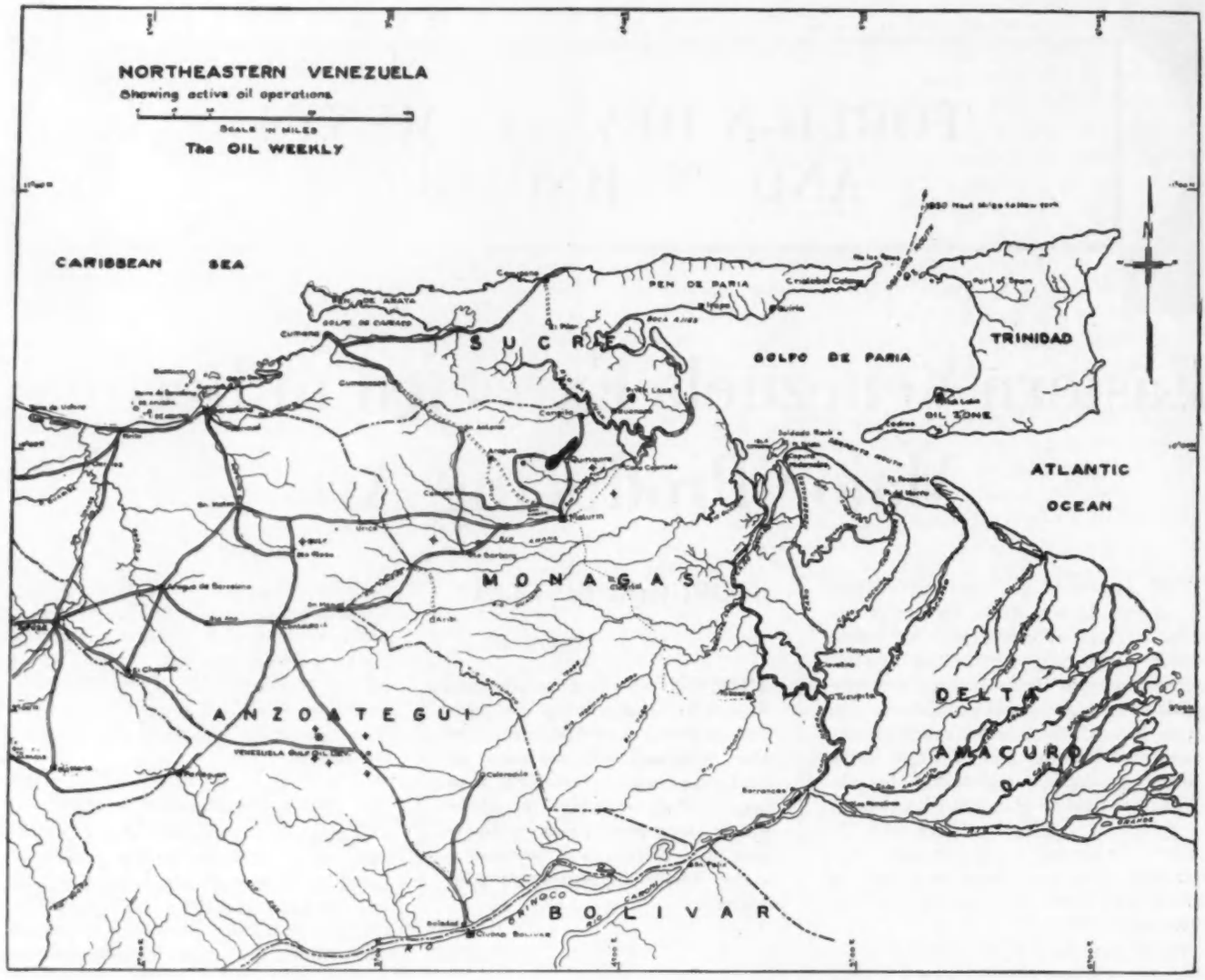
Little study of the general geology is needed to see that it and the topography of the country are closely related. The older rocks are the harder, the igneous, Cretaceous, and Eocene. These form the mountain chains, and highlands. The Oligocene also is present in the mountains, but in general is so low structurally as to be overlapped by the Miocene beds. These are clays, sands, and sandy shales, and form the lowlands around the central basin. Pliocene has not worked out as yet, but is unimportant. Pleistocene sediments are sands and gravels washed out from the Andes, and form the mesas of the Llanos.

Surface Exploration in 1934

During 1934, geologists and geophysicists were very busy in this portion of South America. Standard Oil Company of Venezuela had three surface parties, two torsion balance and two seismograph units. Gulf Production Company had one surface party, and a double seismograph party of nearly 40 men. Orinoco Oilfields, Ltd., (Anglo-Persian) had a couple of surface geologists, and 35 seismograph men. The latter went to work for the Sinclair organization late in the year. Besides the above field parties, all these companies have offices, and most of them have land survey crews at work.

Standard Oil Company of Venezuela also kept an aeroplane busy during the year, taking photographs of the entire Delta district, and also parts of the center of the basin. It is planned to complete this work in 1935. Outcrops in the softer sediments are few and far between, and the brushy nature of the country makes progress slow. Photos are a great help in locating both the natural features, trails and roads, both for the geologist and the land surveyor. Some of the smaller structures show up very clearly from the air, but as a rule one must have a knowledge of the regional structure before it is possible to pick contacts on the photos. Surface work was carried on in the usual and ordinary way, by building up a base with the alidade, and filling in detail with Brunton traverses. All car roads could

*Mr. Pinkley recently returned from Caripito, Venezuela, where he was stationed as a member of the geological department of Standard Oil Company of Venezuela.



be run with the plane table, but the native trails and streams were generally too crooked for that type of survey. Where the country is sufficiently broken, triangulation was used, although frequently this was impossible on account of the brush. In general the geologic problems are the same as those of the Gulf Coast of Texas, without the aids of highway excavations, cleared fields, or dry holes.

Methods of Surveying

Torsion balance parties were used with fair results in all parts of the country. On the open llanos, parallel lines were run at five to seven kilometer intervals, but in the brush, only the main roads were surveyed. In the swamp, trails were cut out, and the instruments carried in by man power. Some work was done in canoes, but the winding of the watercourses made it difficult to obtain an even pattern of stations. Seismograph work has been done mainly on the llanos, for the sand and gravel coating here prevents the surface geologist from working. At least one discovery can be attributed to the work of these instruments. They also have a number of dry holes to their credit.

Owing to the open nature of the llanos, trucks are used for transportation the year round. On the savanna the rainy season makes progress slow from June to November. Double wheel trucks can navigate through the area the entire season, but chains are advisable. The rains in the interior are in the form of thundershowers, and only rarely will a party lose an entire day. The roads are merely trails cleared through the brush, with only a few bridges across streams, hence a journey takes on the nature of an expedition. It is necessary to take food, bedding, spare gasoline, tools, picks and shovels, block and tackle, as well as a few native boys for the heavy work. In the dry season the roads are dusty and rough, but can always be negotiated. The main problem at that time is drinking water.

There is but little work as yet for the subsurface geologist, as only a handful of wells have been drilled outside of the Quirequire field district. The subsurface there is fairly worked out, after several years of labor and argument. The country represents a separate province and many wells will have to be drilled to obtain a complete picture.

As is frequently the case in this country, the land departments of the various companies have been more active than their geologists, and a majority of the country was leased up before much was known of the geology.

All oil rights are vested in the government, as is the usual case in Latin American Countries, and concessions for a long term of years are granted for a small amount per acre. A yearly rental also is paid, and after a few years, usually five, an accurate survey map of the property must be filed. After another five years, unless the property has been developed, one half of it must be returned to the government. The properties on production pay a certain minimum sum as royalties, as well as a percentage of the oil. The properties that are partitioned are usually promptly leased again to other operators, so that there is little land open in the entire eastern part of the country.

Quirequire Field

The Quirequire field is at present the only commercial production in this prov-

ince. It lies just south of the mountains between the San Juan and Guarapiche rivers, about 20 miles north of the town of Maturin and 45 miles from the seacoast.

Attention was directed to this area some 25 years ago, following oil interest in Trinidad. A pitch lake was found on the north side of the San Juan River at Guanoco. In 1912 the first well was drilled in the area, finding a show of heavy oil in the Cretaceous. More drilling was done in 1918, and the first producer found in 1924, a 300-barrel well in the north part of the present field. The following year two wells were drilled in the main part of the field. Since that time development has been continuous. The early wells were drilled on 900-foot locations, but as the producing area grew, they were spaced 2900 feet apart in order to determine the edges of the field. This was done in 1935, although there will be some small extensions. The field is about 16 miles long and over two miles wide, comprising close to 16,000 acres of proved territory. Only 80 wells have been drilled to date, and the present development plan of the company will take three years to complete all proved locations.

There are two oil zones in the field, one from 2400 to 2700 feet, and one from 2900 to 3200 feet. These zones dip to the southeast, and as the field is in a foothill area of rather rough terrain, there is considerable difference in completion depths. It is largely due to the broken surface that such wide locations are used. The expense of clearing the heavy timber and the building of roads is a considerable item in the development costs. Most of the locations will be twin wells to tap both pay zones.

As the entire property is controlled by one company, Standard Oil Company of Venezuela, the entire project is being developed systematically and as economically as possible. Early operations were very expensive and the company has a tremendous investment. The present outlook is that it will turn out to be extremely profitable.

Drilling Conditions

The first drilling was done by cable tools, but these were soon discarded in favor of medium weight rotary rigs. American drillers and native crews have drilled most of the wells; a few have been drilled by natives entirely. The average native is a mixture of Indian and Spanish blood. Negroes from the island of Trinidad are used when available, and are considered preferable.

The section is one of shales, sandy shales, and sand, with the oil in sand and conglomerate lenses. No special problems are presented in drilling, nor in the production practices. The usual slotted and perforated liners are used, and screens in zones of fine sand. The oil is found in the lower Miocene beds, which are shoreline deposits here. There is some speculation that the oil might have originated in the underlying Oligocene black shales, which are folded and truncated in this area. One well was drilled to over 7000 feet without reaching the bottom of this section, nor finding any sands in it. There is considerable gas with the oil, most of which is separated and pumped into the sand in the older part of the field for repressuring. The oil is pumped through two pipe lines, an eight-inch and a ten-inch welded line to a loading wharf on the San Juan River. Ocean going tankers can dock here, but owing to a bar at the mouth of the river can only load to a draft of 18 feet, although there is over 60 feet of water at the dock. A steel barge is anchored at the mouth of the river, and the large vessels top-off there. Small tankers operate on a shuttle schedule to keep the barge loaded to its 90,000-barrel capacity. Vessels as large as 110,000 barrels are loaded in this manner. A deep water loading base is being constructed on the north side of the Gulf of Paria, but is not in operation as yet.

Most of the oil is sent to American markets, but a good portion goes to the refineries on the island of Aruba, Dutch West Indies. Some also is sent to Europe, and to the main ports of South America. The higher gravity oil carries gasoline and kerosene, and Standard Oil Company operates a 1500-barrel topping plant at Caripito, where products for local consumption are removed. The oil is an excellent fuel and road oil stock, and is in considerable demand.

Owing to congested shipping facilities, and to the fact that the oil is too heavy to permit rapid pumping, only 45,000 barrels a day are produced. The field has a potential of much more. The thick sand section and size of the field assures a reserve of several hundred million barrels, and the life of the wells should approximate 20 years. Wells are produced on very small chokes, to obtain the best oil-gas ratios, and only wells near the water line are pumped steadily when they refuse to flow.

The company has built two permanent camps, one in the field for drilling and production men, and another at Caripito for the main office. The latter is at the refinery and loading dock, and all incoming supplies are handled through this camp. Most of the equipment is purchased in the United States; some is secured in Trinidad. The field parties in the south are sometimes outfitted from the town of Cuidad Bolivar, on the Orinoco. All supplies are very hard to obtain in this area, and are usually quite expensive.

Company camps are attractive and well built. Both brick and frame bungalows are constructed. Golf courses, bowling alleys, mess halls, and clubhouses are provided. A swimming pool is under construction at Caripito as the river is not a healthy place for bathing. Life in the camps is not bad, although the climate is somewhat more humid and warmer than it is in the interior.

Other Areas

Besides the Quirequire field Standard Oil Company of Venezuela has found some oil on the coast at Pedernales, and at one time this looked like a major discovery. The oil, however, is found in a flour sand, and no screens have been able to separate it. This area is therefore in an experimental stage, and may at some time be satisfactorily developed.

Some oil has been found at Oriqual, 10 miles west of Quirequire, but as only two wells have resulted from seven tests, this field will not be of commercial importance. It is a small fold, with only a small lens of the rich pay that occurs to the east.

One hundred miles to the southwest the Venezuelan Gulf Oil Company drilled Officina 1, late in 1933, and completed it as a wet gas well. During 1934 six additional wells were drilled in the area, for geologic information, none of which has been released to the general public. Concession requirements obligated the partition of half of the acreage in this area, and the final development program has not been started yet.

As this part of Venezuela represents a structural basin with several thousand feet of marine sediments, it is too soon to say just how much oil will eventually be taken from it. The tremendous richness of the Quirequire field alone makes an important reserve, and it is hardly possible that this will be the only field found. Much of the surface geology worked by the writer was on semi-marine beds, but there is every reason to believe that marine beds are present at drillable depths, and that several of the structural features observed will yield oil, besides the probability of additional shoreline conditions. The area offers a prospective territory that will not be fully tested for another 10 or 20 years.

SAMPLE WELL COMPLETIONS QUIREQUIRE FIELD

Well No.	Total Depth	Init. Prod. Bbls.	Gravity	Choke	Gas/Oil Ratio
45	3253	1286	16.9	1/4"	158
46	3286	7080	18.1	1"	102
47	....	1150	....	1/4"	...
48	....	891	20.9	1/2"	247
49	2968	1474	18.4	3/4"	210
50	2730	980	16.3	1/2"	204

Quirequire 45 was drilled by native crew in 41 days. Quirequire 46 was drilled by American crew in 32 days.

Bureau Report Shows Stock Increase Despite Big Demand

THE latest Bureau of Mines monthly report on the petroleum industry, covering February, embodied some statistics of favorable nature, but some also that were not favorable.

Advantageous factors revealed by the report included continued relatively high demand for most of the oil products and a continuation of reduction of stocks of many of the products. On the unfavorable side were figures showing relatively large expansion of motor fuel stocks and continued weakness of prices.

The percentage yield of gasoline from crude oil processed showed a decline in February. But that was offset by a large gain in runs of crude to stills. The result was that daily motor fuel production increased substantially.

Gasoline production allowables were higher in February than in January. Consequently crude runs to stills were higher. For the month the average runs were 2,529,000 barrels daily, as compared with 2,434,000 barrels daily in January.

Demand for Motor Fuel

The indicated domestic demand for motor fuel in February was 26,509,000 barrels, or 947,000 barrels daily on the average. As compared with February, 1934, the February figures represented a gain of about five percent in refinery deliveries. The gain in actual consumption during the period was indicated, however, to be somewhat less. For the figure used for February of last year was probably below normal.

Motor fuel exports in February, 1935, averaged 42,000 barrels daily, the lowest since December, 1922.

Stocks of finished gasoline, unfinished gasoline, and natural gasoline rose 5,673,000, 610,000, and 251,000 barrels, respectively, in February. The total stocks of finished and unfinished gasoline on February 28 were 64,888,000 barrels. It was stated in the report that if the recommendations regarding stock increases in the March allocations were followed, the total for March 31 will be about 67,800,000 barrels, or 1,600,000 barrels above the total accepted by the industry as the current economic level for that date.

During February there was continued relatively high consumption of the fuels, kerosene, gas oil, fuel oil, and coke. Stocks of all those commodities declined further during the month.

Prices

The price index for petroleum products for February, 1935, according to the Bureau of Labor Statistics, was 48.7, compared with 48.8 in January and with 50.3 in February, 1934.

Refinery data of the report were compiled from refineries with aggregate daily recorded crude oil capacity of 3,536,000 barrels. Those plants operated during February, 1935, at 72 percent of their capacity, given above, compared with a ratio of 69 percent in January, 1935.

Crude Oil Production

United States crude oil production in February, 1935, was 72,763,000 barrels, according to the report, a daily average of 2,599,000 barrels. That average was 60,000 barrels a day higher than the average for January. This gain in crude production was due largely to an increase in the federal allowable. The daily allowable for February was 2,526,000 barrels, compared with 2,460,300 barrels in January.

The higher crude oil output in February was due largely to gains in Texas, Kansas, and Louisiana, with the former having the larger portion. Daily average production in both Oklahoma and California remained virtually stationary at about 490,000 and 500,000 barrels, respectively.

In the East Texas field the daily average production increased to 493,100 barrels from 459,900 barrels in January. That higher output was largely due to increased hot oil production following the decision of the Supreme Court on the NIRA Section 9 (c). The number of oil wells completed in the field was higher in February than in January, and the total number of drilling wells was greater at the end of February than at the beginning. Development of the Fitts pool of Oklahoma was well under way in February.

The gain in crude production in February was exceeded by the gain in runs to stills. Consequently crude stocks declined from 338,174,000 barrels to 337,319,000 barrels, or about to the level of January 1.

SUPPLY AND DEMAND OF ALL OILS
Table from Bureau of Mines February Report on Petroleum
(Thousands of barrels of 42 gallons)

	February, 1935	January, 1935	February, 1934	Jan.-Feb., 1935	Jan.-Feb., 1934
New Supply:					
Domestic production:					
Crude petroleum	72,763	78,715	65,450	151,478	137,426
Daily average	2,599	2,539	2,338	2,567	2,329
Natural gasoline	2,952	3,286	2,795	6,238	5,819
Benzol[1]	148	147	132	295	262
Total production	75,863	82,148	68,377	158,011	143,507
Daily average	2,709	2,650	2,442	2,678	2,462
Imports[2]:					
Crude petroleum:					
Bonded warehouses	773	549	140	1,322	343
For domestic use	1,130	1,462	2,891	2,592	5,488
Refined products:					
Bonded warehouses	812	972	558	1,784	1,630
For domestic use	974	1,101	77	2,075	249
Total new supply, all oils	79,552	86,232	72,043	165,784	151,217
Daily average	2,841	2,782	2,573	2,810	2,563
Decrease in stocks, all oils	[3]2,922	[3]1,231	3,971	[3]4,153	8,449
Demand:					
Total demand	76,630	85,001	76,014	161,631	159,666
Daily average	2,737	2,742	2,715	2,740	2,706
Exports:					
Crude petroleum	2,804	2,369	2,511	5,173	4,799
Refined products	3,756	6,411	5,423	10,167	10,704
Domestic demand:					
Motor fuel	26,509	28,062	25,048	54,571	54,464
Kerosene	4,597	4,299	4,154	8,896	8,399
Gas oil and fuel oil	29,643	33,751	29,734	63,394	62,446
Lubricants	1,297	1,557	1,302	2,854	2,742
Wax	64	69	83	133	172
Coke	593	702	805	1,295	1,861
Asphalt	612	592	359	1,204	761
Road oil	124	156	151	280	316
Still gas (production)	3,513	3,808	3,050	7,321	6,507
Miscellaneous	160	203	147	363	188
Losses and crude used as fuel	2,958	3,022	3,247	5,980	6,307
Total domestic demand	70,070	76,221	68,080	146,291	144,163
Daily average	2,503	2,459	2,431	2,480	2,443
Stocks:					
Crude petroleum	337,319	338,174	351,641	337,319	351,641
Natural gasoline	4,781	4,530	3,785	4,781	3,785
Refined products	226,201	222,675	238,338	226,201	238,338
Total, all oils	568,301	565,379	593,764	568,301	593,764
Days' supply	208	206	219	207	219

[1]From Coal Division. [2]Imports of crude as reported to Bureau of Mines; imports of refined products from Bureau of Foreign and Domestic Commerce. [3]Increase.

MARKETS and STATISTICS

Mid-Continent Prices Above Peak Levels of Last Year

THE Mid-Continent wholesale gasoline market made further progress last week in the steady and consistent advance that has been under way for two months. The tank car prices are now at levels that are the highest for this year and higher than the peak levels of 1934.

The standard and premium grades of gasoline are selling at prices higher than any reached in all of 1934 and 1935. The present third grade gasoline prices at the refineries were equaled in 1934 only for about two weeks, in the latter part of May.

Prices that were prevailing in the latter part of the past week were one eighth cent per gallon higher than the quotations of a week previously.

The current upward swing of the Mid-Continent tank car market began about March 1, with reinstatement of federal shipping control in East Texas. Practically every week since then has brought a gain of one eighth cent a gallon in the price, while in some instances quarter-cent gains have occurred.

The Group Three (Oklahoma) and North Texas markets have not failed in any week since the beginning of March to show some progress. But the East Texas market has failed to advance during a few weeks, although consistently holding its ground.

At 4¼ cents a gallon, the present tank car price for third grade U. S. motor gasoline (below 62 octane) at North Texas and Oklahoma refineries is almost one cent better than the price of 3⅜ cents that prevailed March 1. Standard or middle grade (62-67 octane) has advanced five eighths of a cent in the meantime, rising from 4⅛ to 4¾ cents; while premium grade (68-70 octane) has risen one half cent, to 5⅛ cents a gallon.

In East Texas the third grade gasoline has increased less than in North Texas and Oklahoma, having risen five eighths of a cent. Last week the price was up to 4⅛ cents. On March 1 it was 3½ cents. As in North Texas and Oklahoma, however, the middle grade has improved five eighths of a cent, rising from 4 to 4⅝ cents; while the premium grade has gained a half cent, from 4½ to 5 cents.

Despite the long-continued advance of the tank car market, as above outlined, there are some indications that prices are due to go still higher. Among the factors that are tending to push the market still higher are the increasing demand for gasoline as spring advances, substantial inter-refinery buying, the upward trend of tank wagon and service station prices, and the continued exclusion of hot East Texas gasoline from markets outside Texas.

With the illegal and underpriced East Texas material confined within Texas, the market situation in that state has become unfavorable. But some slight improvement was indicated last week. Hot oil output of the big field was estimated to have averaged between 25,000 and 30,000 barrels daily during the week. The refineries of the district had cut down throughput to some extent, after virtually saturating the tank truck gasoline market within trucking distance of the field.

East Texas refiners engaged in processing hot oil are being harassed greatly, and some have consequently slowed down, pending lifting of some of the pressure.

East Texas Tank Car Shipments

Week Ending April 7, 1935

Products—	No. Cars	Estimated Gallons
Gasoline	491	3,974,650
Fuel Oil	244	2,370,979
Casinghead Gasoline	116	1,016,499
Kerosene	84	679,478
Distillate	82	665,550
Residuum	44	381,039
Gas Oil	38	324,669
Topped Crude	19	116,849
Naphtha	8	64,787
Crude Oil	5	50,352
Total	1,131	9,694,852
Total Prev. Week	1,215	10,421,843
Interstate	496	
Intrastate	352	
Coastwise	283	
Total	1,131	
Tendered	995	
Without Tenders	136*	
Total	1,131	

* 117 cars fuel oil and 19 cars topped crude moved under Federal Court injunctions.

Better Price Cause East Texas Hot Oil Decline

VOLUME of excess crude production in the East Texas field the past week averaged from 25,000 to 30,000 barrels daily, according to estimates, with 13 of the 27 plants in operation on April 10 allegedly providing the market for this illegal crude output. Improvement in the price quotation on gasoline supported by approved tenders has resulted in more plants shifting from hot oil to legally produced crude.

East Texas refiners were receiving 4⅛ cents per gallon for their 60-62 gravity 400 end point gasoline late last week, with demand somewhat stronger. A slight boost in interstate freight rates to become effective April 18 on petroleum products is being counted upon by plant owners to stimulate buying the forepart of the current week. Tank truck movement of gasoline and limited volume of burning oils amounted to 2,520,000 gallons during the week ending April 1. This compares to 2,677,500 gallons the previous week. Refined products derived from hot oil is marketed in this manner. A slight decline in tank car shipment of petroleum production from East Texas occurred the past week. Shipments made under the protection of federal court injunctions increased from 102 to 136 cars.

Upward Price Movement Continues in Oklahoma

THE present strong position of the Mid-Continent refined products markets is hard to analyze, in the face of continued unfavorable weather and the reluctance of brokers to enter the market speculatively, in buying for possible immediate future price increases.

The Group 3, Oklahoma, spot market on third grade U. S. motor fuel, 62 and below octane, had advanced one-eighth of a cent per gallon during the past week, and seemed headed for higher ground.

Although refiners say that prices are

now only meeting manufacturing costs at the $1.00 per barrel crude price, rumors of a possible crude price increase in the near future were being circulated in Tulsa.

No third grade material was reported at less than 4⅛ cents per gallon, and a low spot price of 4¼ cents was said to be conservative by most observers.

Inter-refinery buying, coupled with upward tank wagon and service station prices, seemed to offer the best explanation for the continued strength.

East Texas material at any price was said to be scarce on the Oklahoma market, and many brokers are convinced that this area has ceased to be a source of underpriced materials.

Crude Production Distribution of World Is Shifting Steadily

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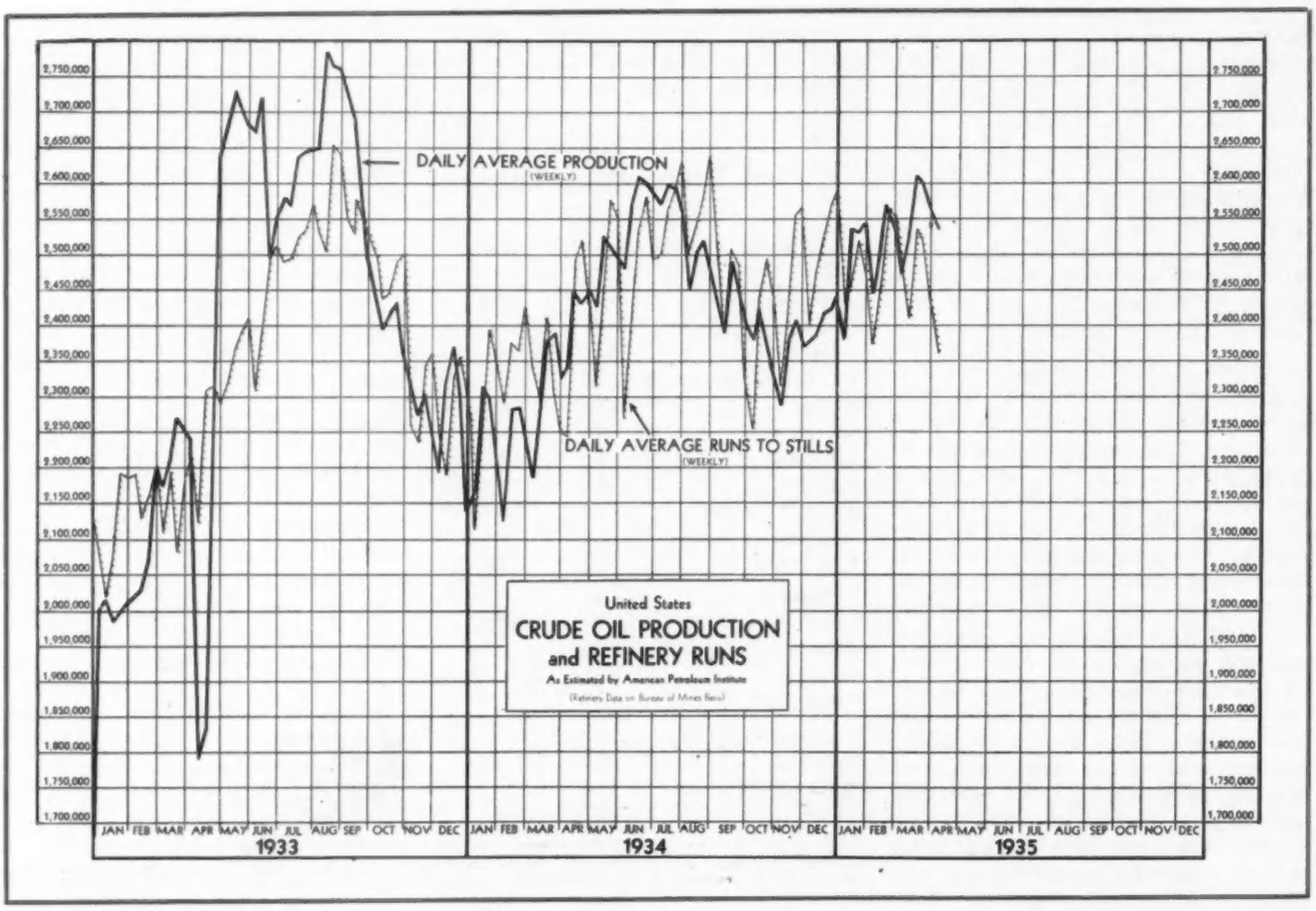
THAT the petroleum industry in its entirety is one of the world's major industries is readily admitted; however, analyses of the facts pertaining to the structure of this industry, as well as an understanding of their wider implications, are likely to be passed by even in studies that assume to be serious attempts in the interpretation of this industry, either as a whole or of its many phases or parts.

Since the beginning of petroleum production in 1859 some 22,729,625,000 barrels had been brought to the surface by January 1, 1934. Obviously this huge amount represents a vast quantity of energy materials, a fact that is apparent when its energy value is compared with that of the coal produced during the same period.

It is, however, in the rate of increase of production and the maintenance of this rate that makes oil production so striking, when compared with other minerals, especially coal. Since 1860 the average yearly increase percent; whereas that of oil has been 8.4 percent. The period of doubling of production in world production has been 16.7 years; that of oil 8.6 years. Moreover, world coal production received a substantial setback during and immediately following the World War. Since 1912 coal has had difficulty in maintaining a level of production. Oil production received no setback during the war period; on the contrary it continued steadily to increase in quantity produced, in spite of the great advances made in refining technique.

The most striking fact about oil production in the past is perhaps that of its geographical concentration. Down to the beginning of 1934 North and South America had produced 77.6 percent of the total of the world's recorded production; the United States alone had produced 65.1 percent of that vast total. Mexico had produced 7.3 percent; Venezuela, 3.3 percent; all the rest of the Americas only 1.9 percent. Of this vast total Europe had produced 15.8 percent, Russia easily leading with 12.7 percent of the world's



total. Asia produced only 5.5 percent; of which 2.4 percent came from Netherlands East Indies and 2.1 percent from Persia. India had supplied only 1 percent.

That shifts in world oil production are occurring is indicated in the distribution in 1933. In that year the Americas furnished 78.1 percent of the total world production, with the United States furnishing 63.5 percent; Mexican production amounted to 2.4 percent that of the South American countries 11.5 percent. Production in Europe accounted for 14.6 percent of the world's total, Russia and Rumania furnishing 14.2 percent of the world total; Asia accounted for 7 percent and Africa (Egypt) only 0.11 percent. And for the first nine months of 1934 the increase of world production over that of the same period of 1933 was 5.64 percent; the increase in the United States, however, was less than 1 percent, or 0.59 percent; the increase in the rest of the world was 14.62 percent.

Examination of data on geographical distribution of oil production in the United States shows concentration also in a striking degree. Of the total quantity for this country from 1859 to the first of 1934, three states had furnished 70 percent of the recorded total—California, 25.75 percent, Oklahoma, 22.4 percent, and Texas 21.73 percent. If to these three major producing states are added Pennsylvania, Kansas, and Louisiana, these six states account for nearly 75 percent of United States production. Further examination of production data show feature of even greater concentration of production, together with the rise of Texas production to a more than dominating place in United States production.

For the period 1901-1905 California furnished 20.4 percent of national production; Texas furnished 16.8 percent and Oklahoma only 0.3 percent. Then followed a rise in Oklahoma production and in the period of 1919-1923 California produced 27.8 percent of our total; Oklahoma 23.9 percent and Texas 20.6 percent. In the period 1924-1928 California continued to hold first place with 28.4 percent of an increasing national production; Oklahoma furnished 26 percent and Texas 22.7 percent. In the period 1929-1933 Texas easily achieved first place with 36.7 percent of the nation's oil; California took second place with 23.9 percent, closely followed by Oklahoma with 22.2 per cent.

Oklahoma Increase Pushes Nation's Output Up

UNITED States crude oil production increased last week to a level 35,775 barrels per day higher than the average of the previous week, having amounted to 2,579,475 barrels daily. This new average, covering the week ending April 13, was 52,175 barrels per day in excess of the market demand, as estimated by the federal government, in its schedule of recommended allowables.

Oklahoma Up 37,000

The excess production did not represent cause for anxiety, however, since it was largely due to exceptional circumstances. Oklahoma was above its allowable by a large margin, but that state regularly shows such excesses early in each month, compensating for them later in the month with under-production.

In averaging 529,850 barrels daily last week, Oklahoma was about 37,000 barrels above its allowable of 493,300 barrels daily as recommended by the federal government. In the previous week the state's output averaged 473,325 barrels daily. Oklahoma City, the Seminole area and Lucien fields were responsible for the higher production.

Texas production dropped sharply, to 1,020,700 barrels daily from 1,047,900 barrels, reflecting the reduced April allowables, as fixed by the Texas Railroad Commission. The state's production at the reduced rate was slightly under the figure that had been recommended by the federal government. The East Texas field's output declined to 436,400 barrels daily from 451,100 barrels, the allowable having been reduced. West Texas, East Central Texas, and the Texas Gulf Coast also showed declines, reflecting reductions of a little over 3000 barrels each in the allowables of the Yates, Van, and Conroe fields, respectively.

California

California's production rate rose 5000 barrels, to a new level of 492,500 barrels daily. The state was still within its federal government allocation of 493,300 barrels, however.

Kansas production of 144,025 barrels daily last week was nearly 1000 barrels lower than for the previous week. The state's allocation on the federal agency schedule is 141,000 barrels daily.

Louisiana production rose slightly last week, going to 119,300 barrels daily from 118,525 barrels the previous week. The Louisiana allocation is 111,000 barrels daily for April.

United States Crude Oil Production

Estimates Compiled by The OIL WEEKLY

District or State	Barrels Daily for Week Ending April 13	April 6
TEXAS—		
Texas Panhandle	65,200	66,100
North Texas	57,600	57,600
West Central Texas	25,700	25,800
West Texas	150,100	153,100
East Ceneral Texas	48,100	51,900
*East Texas Field	436,400	451,100
South Texas	60,500	60,200
Texas Gulf Coast	177,100	182,100
*Total Texas	1,020,700	1,047,900
OKLAHOMA—		
Oklahoma City	179,550	122,450
Seminole Area	131,850	114,875
Tatums	5,000	6,225
Lucien	10,100	6,200
Fitts	12,825	12,475
Others	190,525	217,300
Total Oklahoma	529,850	473,325
KANSAS—		
Ritz-Canton	8,975	9,725
Voshell	4,625	4,925
Nikkel-Hollow	9,450	9,150
Sedgwick	8,625	10,775
Burrton-Haury	24,375	19,325
Others	87,975	91,050
Total Kansas	144,025	144,950
LOUISIANA—		
North Louisiana	22,500	22,325
Louisiana Gulf Coast	96,800	96,200
Total Louisiana	119,300	118,525
ARKANSAS	31,300	31,200
CALIFORNIA—		
Long Beach	71,500	66,500
Santa Fe Springs	40,500	38,500
Huntington Beach	38,500	39,000
Dominguez	22,000	21,500
Inglewood	10,500	11,000
Ventura Avenue	14,000	10,500
Seal Beach	7,500	7,500
Midway-Sunset	56,500	54,000
Elwood	11,000	11,000
Kettleman Hills	52,500	67,500
Mountain View	9,500	9,500
Playa del Rey	10,600	11,500
Others	148,000	139,500
Total California	492,500	487,500
MOUNTAIN STATES—		
Wyoming	34,500	33,100
Montana	11,000	10,600
Colorado	5,200	5,200
Total Rocky Mountain States	50,700	48,900
NEW MEXICO	47,100	47,100
EASTERN STATES	106,900	107,500
MICHIGAN	37,100	36,800
*Total United States	2,579,475	2,543,700
*Surreptitiously produced oil in East Texas, not included in above figures, estimated at	30,000	32,000
Grand total including surreptious production	2,609,475	2,575,700

Crude Runs to Stills; Finished and Unfinished Gasoline; Gas and Fuel Oil Stocks, and Cracked Gasoline Production, Week Ended April 6, 1935

(Figures in thousands of barrels of 42 gallons each)

DISTRICT	Daily Refining Capacity of Plants			Crude Runs to Stills		Stocks of Finished Gasoline			(a) Stocks of Unfinished Gasoline	(b) Stocks of Other Motor Fuel	Stocks of Gas and Fuel Oil	Daily Charging Capacity of Cracking Units			Cracked Gasoline Production
	Potential Rate	Reporting		Daily Average	% Operated	At Refineries	Bulk Term., in Trans. & Pipe Lines	Total at Refys., Term., etc				Potential Rate	Reporting		Daily Average
		Total	%										Total	%	
East Coast	582	582	100.0	453	77.8	7,175	10,408	17,583	794	170	9,850	496	471	95.0	65
Appalachian	150	140	93.3	79	56.4	1,219	794	2,013	329	115	888	69	69	100.0	20
Ind., Ill., Ky.	446	422	94.6	336	79.6	6,815	2,965	9,780	735	50	4,368	325	309	95.1	92
Okla., Kans., Mo.	461	386	83.7	248	64.2	3,452	2,241	5,693	710	385	3,892	256	238	93.0	57
Inland Texas	351	167	47.6	69	41.3	1,241	114	1,355	231	675	1,797	82	66	80.5	23
Texas Gulf	601	587	97.7	462	78.7	6,148	297	6,445	1,527	270	8,651	358	355	99.2	84
Louisiana Gulf	168	162	96.4	101	62.3	961	442	1,403	195	.....	3,397	71	71	100.0	17
North La.,—Ark.	92	77	83.7	43	55.8	166	61	227	43	145	350	41	38	92.7	7
Rocky Mountain	96	64	66.7	43	67.2	1,001	.....	1,001	101	55	756	46	42	91.3	10
California	848	822	96.9	376	45.7	9,247	1,384	10,631	940	2,610	64,756	209	209	100.0	58
TOTALS WEEK: April 6, 1935	3,795	3,409	89.8	2,210	64.8	37,425	18,706	56,131	5,605	4,475	98,705	1,953	1,868	95.6	433
March 30, 1935	3,795	3,409	89.8	2,294	67.3	37,910	18,478	56,388	5,860	4,365	99,105	1,953	1,868	95.6	449

Below are set out estimates of Crude Runs and Cracked Gasoline Production on B. of M. Basis for Week April 6, 1935 compared with April 1934 Bureau figures.

Estimate B. of M. Basis April 6, 1935	2,360		490
Estimate B. of M. Basis March 30, 1935	2,430		500
U. S. B. of M. April 1934: Daily Average Crude Runs	2,452	U. S. B. of M. April 1934: Daily Average Cracked Prod.	485

(a) Amount of Unfinished Gasoline contained in Naphtha Distillates.
(b) Estimated. Includes Unblended Natural Gasoline at refineries and plants; also Blended Motor Fuel at plants.

McMurrey Suit Appeal Is Set for May 20

Austin, Texas.—The Third Court of Civil Appeals has set for hearing on May 20, an appeal of defendants in the $12,000,000 McMurrey suit.

Attorney General William McCraw has filed suit against the McMurreys, alleging that they have continued to violate conservation laws of Texas and the regulations of the Railroad Commission issued thereunder.

Because several injunctions had not detered the defendants from continuing these violations, according to the petition filed in the suit by the State, an ex parte receivership was granted by Judge W. F. Robertson in the 126th District Court.

The hearing next month will be on the appeal from this receivership action. The defendants have posted a supersedeas bond of $100,000. Efforts of the Attorney General to have this bond increased to $1,000,000 have been fruitless.

Comparison of Permits Granted for New Wells

STATE—	Week Ending April 6	Total this Mo.	Total this Year	Total this Date Last Year	1934 Year Total
Arkansas.	2	2	45	12	100
California	16	16	224	124	629
Louisiana.	25	25	210	202	799
Kansas...	16	16	392	234	1,015
Michigan.	9	9	101	123	460
Oklahoma	40	40	572	556	2,045
Texas....	354	354	3,647	2,350	10,550
Totals..	462	462	5,191	3,601	15,598

Seeks Texas Hot Oil Running Investigation

Austin, Texas.—A resolution to investigate hot oil running by Representative Augustine Celaya of Brownsville, was referred Friday to the House Committee on Oil, Gas and Mining. Under its terms five members of the legislature would investigate charges that large amounts of hot oil are being run. Celaya pointed out that charges have been made that the condition exists, but that the Railroad Commission has no funds with which to conduct such an investigation. He referred indirectly to articles by Owen White, written on this subject which have recently appeared in a magazine of national circulation.

Court Requires Refinery File Commission Report

Austin.—The State of Texas was granted an injunction Friday by Judge W. F. Robertson in the 126th District Court, requiring Apex Refining Company of Gladewater to file daily and monthly refinery reports and to obtain Railroad Commission Tenders on all oil products shipped.

In a suit against J. J. Juneman and Roy Nelson, operators of the plant, the state alleges violation of railroad commission orders governing these matters, and asks penalties of $1000 per day for each day of violation in the past.

North Pettus Plans Approved

Washington, D. C. — Approval of plans for development of North Pettus field, Karnes County, Texas, has been approved by Oil Administrator Ickes. The plan provides for a drilling program under which not more than 35 wells shall be drilled to production during the current year.

CRUDE OIL PRICE QUOTATIONS

(Figures Represent Basic or Flat Prices—Revised to April 12, 1935)

DISTRICT	Low Grav.	Dif.	High Grav.	Date
Oklahoma-Kansas	28—$ .84	2¢	40—$1.08	9-29-33
N. and N.-C. Texas	28— .79	2¢	40— 1.03	9-29-33
Texas Panhandle				
Gray County	34— .79	2¢	40— .91	9-29-33
Carson-Hutchinson	34— .69	2¢	40— .81	9-29-33
West Texas				
Ector, Pecos, Wk'lr	*.75			9-29-33
Crane, Upton, Howard and Glasscock	*.70			9-29-33
East Texas	*1.00			9-29-33
Texas Gulf Coast				
Conroe	35— 1.09	2¢	40— 1.19	9-29-33
Tomball	*1.15			9-29-33
Cleveland	*1.00			1-11-34
†Goose Creek, Hull Liberty, Orange, Pierce Junction, Moss Bluff, Raccoon Bend, Sour Lake, Spindletop, Sugarland, West Columbia, Humble, Rabbs Ridge	Below 20— .82	2¢	34— 1.12	9-29-33
South and S.W. Texas	Below			
Refugio (Light)	20— .82	2¢	34— 1.12	9-29-33
Refugio (Heavy)	*.85			9-29-33
Saxet	*.85			9-29-33
Mirando	*.80			9-29-33
Pettus	*1.05			9-29-33
Salt Flat	*.87			9-29-33
Darst Creek	*.87			9-29-33
Arkansas				
El Dorado (Light) and Rainbow	29— .79	2¢	40— 1.03	3-17-34
El Dorado East Field and Smackover	*.70			9-29-33
North Louisiana	29— .79	2¢	40— 1.08	9-29-33
Urania	*.85-*.87			1- 1-34
SouthLouisiana	Below			
Lockport	20— .80	2¢	34— 1.10	9-29-33
Iowa, Cameron Mds.	Below 20— .70	2¢	34— 1.00	9-29-33
Rocky Mountain States				
Salt Creek	29— .84	2¢	40— 1.08	9-29-33
Elk Basin	*1.17			9-29-33

*All gravities—flat rate.
†Gulf Coast prices as posted by Humble Oil & Refining Company.

DISTRICT	Low Grav.	Dif.	High Grav.	Date
Grass Creek (Light)	*1.17			9-29-33
Big Muddy	*$1.01			9-29-33
Rock Creek	*1.02			9-29-33
Sunburst	*1.35			9-29-33
Lance Creek	*1.02			8-25-33
Osage	*.62			8-25-33
Cat Creek	*.45			8-25-33
Pondera	*.65			8-25-33
Hog Back, N. M.	*1.00			9- 8-33
Lea County, N. M.	*.75			9-29-33
Mid-West States				
Lima	*1.15			2- 1-35
Illinois	*1.13			1- 5-34
Princeton	*1.13			1- 5-34
Western Kentucky	*1.08			5-26-34
California				
Signal Hill	14— .65	1¢	16— .66	9- 6-33
	17— .69	2¢	22— .84	9- 6-33
	23— .88	3¢	30— 1.09	9- 6-33
Seal B., Alamitos Hts.	19— .65	3¢	20— .68	9- 6-33
	21— .72	4¢	22— .76	9- 6-33
	23— .81	4¢	26— .93	9- 6-33
	27— .98	4¢	30— 1.10	9- 6-33
Huntington Beach	14— .65	4¢	15— .69	9- 6-33
	16— .72	3¢	19— .81	9- 6-33
	20— .83	3¢	28— 1.07	9- 6-33
	29— 1.09	3¢	30— 1.12	9- 6-33
Inglewood	14— .65	4¢	16— .73	9- 6-33
	17— .76	4¢	18— .80	9- 6-33
	19— .83	4¢	20— .87	9- 6-33
	21— .90	4¢	22— .94	9- 6-33
	23— .97	4¢	24— 1.01	9- 6-33
Playa del Rey	14— .65	1¢	15— .66	9- 6-33
	16— .69	4¢	17— .73	9- 6-33
	18— .76	4¢	19— .80	9- 6-33
	20— .83	4¢	21— .87	9- 6-33
	22— .90	4¢	23— .94	9- 6-33
	24— .97	3¢	25— 1.00	9- 6-33
			26— 1.04	9- 6-33
Olinda-Brea Canyon	14— .65	4¢	16— .73	9- 6-33
	17— .76	3¢	28— 1.10	9- 6-33
Athens-Rosecrans Domingues	23— .83	3¢	24— .86	9- 6-33
	25— .90	4¢	26— .94	9- 6-33
	27— .97	3¢	29— 1.04	9- 6-33
	30— 1.08	4¢	31— 1.12	9- 6-33
			32— 1.15	9- 6-33
Elwood (fob ship)	33— 1.03	3¢	37— 1.15	9- 6-33
Torrance	14— .65	1¢	15— .66	9- 6-33
	16— .69	3¢	20— .81	9- 6-33
	21— .83	3¢	26— .98	9- 6-33

*All gravities—flat rate.

DISTRICT	Low Grav.	Dif.	High Grav.	Date
Richfield	15—$ .65	2¢	16—$ .67	9- 6-33
	17— .70	4¢	20— .82	9- 6-33
	21— .85	4¢	22— .89	9- 6-33
	23— .93	4¢	24— .97	9- 6-33
	25— 1.00	4¢	27— 1.06	9- 6-33
	28— 1.11	4¢	29— 1.15	9- 6-33
Whittier-LaHabra	15— .65	3¢	18— .74	9- 6-33
	19— .78	3¢	24— .93	9- 6-33
Montebello	19— .65	1¢	20— .66	9- 6-33
	21— .69	3¢	22— .72	9- 6-33
	23— .76	4¢	24— .80	9- 6-33
	25— .85	4¢	26— .89	9- 6-33
Coyote Hills	16— .65	3¢	19— .74	9- 6-33
	20— .78	3¢	29— 1.05	9- 6-33
	30— 1.09	3¢	34— 1.21	9- 6-33
Santa Fe Springs	21— .72	4¢	22— .76	9- 6-33
	23— .79	4¢	25— .87	9- 6-33
	26— .90	4¢	28— .98	9- 6-33
	29— 1.01	4¢	30— 1.05	9- 6-33
	31— 1.08	4¢	33— 1.16	9- 6-33
	34— 1.19	4¢	35— 1.23	9- 6-33
	36— 1.26	4¢	38— 1.34	9- 6-33
New Hall, McKittrick, Kern River	14— .57		19— .57	9- 6-33
Midway-Sunset, Elk Hills, Buena Vista Hills	17— .57	4¢	18— .61	9- 6-33
	19— .64	3¢	22— .73	9- 6-33
	23— .77	4¢	33— 1.17	9- 6-33
Lost Hills	17— .57	4¢	21— .73	9- 6-33
	22— .76	3¢	30— 1.00	9- 6-33
Coalinga	17— .57	1¢	18— .58	9- 6-33
	19— .62	3¢	21— .68	9- 6-33
	22— .72	3¢	25— .81	9- 6-33
Wheeler Ridge	17— .57	1¢	18— .58	9- 6-33
	19— .61	3¢	25— .79	9- 6-33
Kettleman Hills	33— .93	3¢	39— 1.11	9- 3-33
Pennsylvania				
Bradford	*2.35			2- 4-35
Sw Pa. Pipe Line	*2.02			2- 4-35
Eureka Pipe Line	*1.97			2- 4-35
Buckeye Pipe Line	*1.87			2- 4-35
Corning Grade	*1.32			10- 2-33
Michigan				
Central Michigan	*1.20			9-30-33
Muskegon	*.70-1.00			12-31-32
Canada				
Petrolia	*2.10			9- 9-33
Oil Springs	*2.17			9- 9-33

*All gravities—flat rate.

Summary of Wells Completed in the United States

Week Ending April 6, 1935

	Completions	Oil Wells	Gas Wells	Failures	Initial Production	Total Completions 1935	Total Completions this date 1934
Alabama	...	...	...	...	.....	2	1
Arkansas	3	...	...	3	.....	50	22
California	...	...	...	...	.....	177	88
Colorado	...	...	...	...	.....	3	4
Illinois	2	1	1	...	70	8	2
Indiana	...	...	...	...	.....	36	45
Kansas	42	33	6	3	30,520	357	236
Kentucky	8	7	1	...	195	28	24
Louisiana	15	2	4	9	2,130	193	195
Michigan	10	7	2	1	375	85	111
Mississippi	1	...	1	...	.....	7	8
Montana	2	1	1	...	20	17	27
New Mexico	5	5	...	...	9,525	67	25
New York	...	...	...	...	.....	...	3
Ohio	30	3	21	6	13	377	235
Oklahoma	41	25	...	16	75,900	561	507
Pennsylvania	1	...	1	...	.....	33	97
Texas	251	191	3	57	850,930	2,986	2,412
Utah	...	...	...	...	.....	...	3
West Virginia	5	1	4	...	2	138	141
Wyoming	3	2	...	1	20	10	8
Total this week	419	278	45	96	969,700	5,135	4,190
Total last week	438	300	36	102	941,884	4,716	...
Total this year	5,135	3,390	465	1,280	10,272,736	...	...

MAJOR PRICE CHANGES

	Penna. (Nat. Tr.)	Mid-Cont. (36 Gr.)	Calif. (26 Gr.)
March 5, 1933	.....	.....	Cut 24.
May 2, 1933	.....	Cut 19.	.....
May 9, 1933	Cut 20.	.....	.....
May 22, 1933	Up 10.	.....	.....
June 19, 1933	Up 10.	Up 19.	.....
June 26, 1933	Up 10.	.....	Up 9-12
July 6, 1933	Up 13.	Up 10.	.....
July 17, 1933	Up 15.	.....	.....
July 28, 1933	Up 15.	.....	.....
August 11, 1933	Up 10.	.....	.....
August 24, 1933	.....	Up 10.	.....
August 30, 1933	Up 15.	.....	.....
September 6, 1933	Up 10.	Up 10.	Up 15.
September 8, 1933	.....	Up 15.	.....
May 1, 1934	Up 10.	.....	.....
November 6, 1934	Cut 25	.....	.....
December 6, 1934	Cut 25.	.....	.....
January 4, 1935	Up 15.	.....	.....
February 4, 1935	Up 15.	.....	.....

CRUDE PRODUCTION TAXES

Oklahoma—Three percent of gross value less royalty interest.

Texas—Two cents or 2 percent, whichever is higher.

Louisiana—From four to 11 cents a barrel, depending upon gravity.

Arkansas—2.6 percent of gross market values.

Montana—Three percent of gross value at well and ⅛-cent per barrel.

Wyoming and New Mexico—Production tax based upon state and county assessments.

California—.66443 mills per barrel of oil produced and 17.39 cents per acre on proved oil lands.

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THE EVER MOUNTING PRESSURE of extremely deep drilling makes it essential to use Valves and Fittings that have been properly DESIGNED, BUILT AND TESTED for the service and pressure conditions you anticipate.

Extremely large factors of safety have been built into every Kerotest Product. But these factors of safety are built into the products to serve you in an emergency, and should not be used up by Over-Testing in the factory.

Use a product that has been designed for the service and test required. Over-testing may do far more harm than good, and possibly weaken the product.

KEROTEST has a line of valves and fittings that has been designed expressly for each pressure and service condition, for example

6000 lbs. Test for 3000 lbs. W. P.
5000 lbs. Test for 2500 lbs. W. P.
3000 lbs. Test for 1500 lbs. W. P.
2000 lbs. Test for 1000 lbs. W. P.
1500 lbs. Test for 750 lbs. W. P.
1000 lbs. Test for 500 lbs. W. P.

When you buy KEROTEST you know that they have been designed, built and tested in accordance with their rating without calling upon the reserve factors of safety.

KEROTEST
MANUFACTURING COMPANY
Pittsburgh, Pa.

KEROTEST

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Executives Express Optimism

(Continued from page 10)

for reduction of the taxes already existing. Mr. Dawes, of the Pure Oil Company, was among those deprecating the high taxes on the oil industry's products. Frank Phillips, president of Phillips Petroleum Company, declared: "This industry is bearing an altogether disproportionate part of the cost of government. The average amount paid for federal and state taxes per gallon is greater than the wholesale price of gasoline."

Excessive Taxes Lower Demand

In reporting to stockholders of The Atlantic Refining Company, J. W. Van Dyke, chairman of the board, touched on general conditions only to the extent of one subject. It was this subject of constantly rising taxes, against which he voiced a short but piercing protest. "Existing taxes appear certain to grow from year to year for some indefinite time to come," he said. "There are many indications of additional taxes as the outcome of so-called social legislation, both state and federal. In theory, taxes on the products of industry are passed on to the consumer; in fact, they must be largely so passed on, if industry is to survive. But there is a limit to what the consumer can pay," Mr. Van Dyke continued. "Obviously, all of the people cannot pay higher and higher prices for all of the commodities they desire. As prices increase they will curtail, selectively, their use of some commodities. This means a lowered standard of living, generally. The reflex upon industry will be a decreasing demand, with more rapidly decreasing profits."

Dan Moran, president, reported to stockholders of Continental Oil Company that the tax burden of the company increased in 1934 and will likely continue rising. He cited figures showing that the total tax bill applicable to the industry amounted in 1933 to $1,004,824,028. In that year $1.11 in taxes was assessed on each barrel of crude oil and its derivatives, including 78 cents by the states and their subdivisions and 33 cents by the federal government. Need for making the public tax-conscious regarding oils was intimated. While the public vigorously opposes general sales taxes of two or three percent, Mr. Moran said, it passively accepts sales taxes on petroleum products amounting in most instances to 50 percent of the retail price.

Fears About New Laws Lifting

On the subject of oil legislation, enacted and proposed, several executives offered comments. Perhaps reflecting the prevailing attitude on the subject was the discussion of the president of The Pure Oil Company. Mr. Dawes was disposed to discount the actual importance of governmental experiments and proposals, saying that economic influences will ultimately outweigh and prevail over artificial schemes. Increasing cooperation that is being manifested within the industry is more important than external regulation, he believes. Crude production control during emergencies is a special problem, he asserted, and should not arouse protests that the citizens' affairs are being unreasonably interfered with.

The discussion of Mr. Pew, Sun Oil Company president, likewise indicated that fears and uncertainty over legislation are diminishing, although some proposed laws are causing considerable anxiety. Uncertainty has been greatly reduced, he said, as it has become apparent the government will not attempt price fixing or wipe out the anti-trust laws. "It is a cheering sign of the times," he stated, "that government attention is turning from business economics to social economics."

Some governmental trends and proposals, however, were characterized by Mr. Pew as prolonging uncertainty. Among those mentioned was the tendency to promote an "economy of scarcity," through such proposals as the 30-hour week. A warning was sounded, also, that governmental plans for insurance, retirement, pensions, and annuities should not interfere with similar—and in some cases superior—plans now being fostered by many oil companies. Mr. Pew expressed opposition to re-enactment of the National Recovery Act. If codes are to be preserved, however, he said, they should be confined largely to promoting fair wages and working hours.

The heads of Gulf Oil Corporation further reflected the diminishing of doubts. Uncertainties have persisted, they said, because of slow emergence from the depression and because of new and proposed legislation, federal and state. The management is trying, nevertheless, it was said, to follow policies that will hasten resumption of dividends, while at the same time protecting the company's position.

Need for Government Aid Cited

While some of the reports deprecated government interference, others sought to show that there is a definite and important need for government cooperation in stabilizing the industry. Frank Phillips, head of Phillips Petroleum Company,

pointed out, for instance, that many believe the industry can operate satisfactorily only under laws and regulations balancing supply and demand and eliminating unsound trade practices. Proration has proved so satisfactory, he said, that it is safe to predict it will not be abandoned, but more effectively enforced. Mr. Pew of Sun Oil Company also endorsed proration by saying it is causing upward revision of original estimates on his company's reserves. The heads of The Texas Corporation subscribed to public regulation as contemplated in the interstate oil control compact, which was said to be progressing toward adoption.

Benefits from Government

Definite benefits have resulted from the cooperation of state and federal governments in controlling crude production, as evidenced by the improved earnings generally reported in the producing division of the industry in 1934. Some special benefits have also accrued, as in connection with the Pacific Coast Petroleum Agency. The heads of Union Oil Company of California stated, for instance, that improved earnings of that company for 1934 resulted largely from better prices for oil products and the stabilization of the western markets following the establishment of the mentioned agency in June, 1934. The agency agreement was also considered as generally beneficial by William F. Humphrey, president of Associated Oil Company.

Disparity of Prices

The executives of refining-marketing companies naturally had complaints to offer on the disparity between crude and refined oil prices. The Standard Oil Company (Ohio) is an outstanding example of such a company, and its president, Mr. Holliday, protested convincingly against the artificial price relationship. The freezing of crude oil prices at relatively high levels, encouraged by the federal government, cost the refining industry $170,000,000 in 1934, he estimated. While the government authorities pointed to the crude price bolstering as a meritorious achievement, he said, it merely re-apportioned the industry's gross revenue, in favor of the producing branch, and to the detriment of the refining branch. Operating only within the narrowed spread between relatively high crude oil costs and disproportionately low finished product prices, the Standard of Ohio was shown to have occupied an especially disadvantageous position.

Despite an eight percent increase in net sales, the company showed net loss of $1,913,735 in 1934, against net loss of $823,357 in 1933. The 1934 loss was described by Mr. Holliday as the largest the company has had in the whole period since 1922, for which comparable records are available. The loss occurred, it was said, despite the fact marketing costs of the company per gallon were the lowest for the mentioned period, with exception of 1933. In fact, the marketing division of the company, considered separately, was actually on a profitable basis in 1934 it was indicated; yet the company as a whole showed a loss, as it was necessary to absorb deficits on refinery operations. It was not feasible, it was explained, to shut down the company's refineries and buy the handled products in the open market. Indirect expenses, such as taxes, insurance, and depreciation, prohibit refinery shut-downs, and it was necessary for the company to pay the relatively high prices for crude and refine its own products, even though it could have bought the products in the open market at relatively cheap prices.

Refining and Marketing Losses

Similar to the experience of the Standard Oil Company (Ohio), but more fortunate, was that of another concern, Simms Petroleum Company, as reported by Edward T. Moore, president. An essential difference was that the Simms company owned extensive producing properties in addition to refining and marketing facilities. The company lost about $460,000 in refining, marketing, and casinghead operations during only a portion of 1934, after having had similarly unfavorable results for several preceding years. During 1934, consequently, it disposed of the refining and marketing facilities. Pipe line operations during the year also showed a deficit. But crude oil production and prospecting operations showed net profits of about $674,000 for 1934. The company was able, consequently, to show net income of $161,171 for the year. With operations narrowed down primarily to producing crude, the company's net income in the first two months of 1935 was larger than in the same period of any of the preceding four years.

Other Refining Difficulties

Mr. Dawes of The Pure Oil Company conceded that crude prices are relatively higher than refined product prices, causing a burden on the refining and marketing branches. But he said that the producer, even so, is not really receiving an adequate price for his commodity. Considering that crude production is in very fair balance with market demand, he stated, it would seem that crude prices are not out of line, while product prices might be expected to advance.

Mr. Dawes injected another pertinent thought with regard to the relative level of refinery prices, saying: "Because of the high rate of obsolescence and depreciation, the management believes that excessive refining capacity is especially undesirable."

Another factor in the unsatisfactory refinery operations of the past year was brought up when O. D. Donnell, president, reported to stockholders of The Ohio Oil Company that refinery costs were substantially increased in 1934, due to restriction of runs under the code.

Need for Crude Reserves Seen

Especially conspicuous in the reports to the stockholders was the large emphasis placed on the importance of developing and maintaining ample crude reserves. Concerning the subject, the Pure Oil Company president said: "The need of an adequate supply of crude oil is a permanent one. Its importance to both the safety and profit of every oil company is paramount." His company's crude reserves were materially increased during 1934, he stated. While the company has concentrated especially on building up reserves, he explained, it has of course been endeavoring to keep refining, pipe line, and marketing operations in step.

In connection with crude reserves, the Barnsdall Oil Company annual report embodied the following statements: "The total production from East Texas since it was discovered in 1930 was 611,000,000 barrels. Inasmuch as the total stocks of crude oil above ground is less than 300,000,000 barrels, it is apparent that if East Texas had not been discovered there would probably be a serious shortage of petroleum at this time."

Seaboard Oil Company of Delaware and Continental Oil Company were among the concerns reporting increased expenditures in 1934 for development and acquisition of reserves. The Texas Corporation was indicated to have increased its reserves during the year. Sun Oil Company was reported as having in reserve about 14 times the amount of crude that it produced in 1934. Gulf Oil Corporation was described by its management as occupying "a very strong producing position in most of the important producing areas in which it operates." Mr. Blaffer said that Humble Oil & Refining Company in 1934 made capital expenditures of approximately $42,000,000, of which a large amount was for producing and undeveloped leases.

Profitable Operations in 1934

Among the 15 companies considered in this analysis, 12 reported net profits for 1934, only three showing net loss. (Those three were Barnsdall Corporation, The Pure Oil Company, and The Standard Oil Company of Ohio.) In 1933 these same 15 companies included a slightly smaller number showing profit, and a correspondingly larger number showing losses. Among the 12 companies showing profit in 1934, there were three which

had shown loss in 1933; namely, the Texas, Gulf, and Simms companies. Net profit in 1934 was substantially higher for Phillips Petroleum Company and Continental Oil Company, and moderately higher for Union Oil Company of California and Seaboard Oil Company of Delaware. On the other hand, profits were somewhat lower in 1934 for The Atlantic Refining Company, Associated Oil Company, and Sun Oil Company. Humble Oil & Refining Company's net profit for 1934 has not yet been determined, but the president said earnings exceeded dividends. The company had a particularly favorable earnings record in 1933.

Along with favorable earnings in 1934, there was extensive cutting down of long-term indebtedness in the oil industry. Interest payments were eliminated or reduced during the year by numerous companies, through redemption of bonds, for which low-interest bank borrowings were substituted in some instances. Companies that redeemed bonds during the year included Union Oil Company of California, Sun Oil Company, Gulf Oil Corporation, Phillips Petroleum Company, Continental Oil Company, and Humble Oil & Refining Company.

Franklin Praises Ickes And Thomas Oil Bill

Houston.—Wirt Franklin, Ardmore, Oklahoma, president of the Independent Petroleum Association was the guest speaker at a luncheon given at the Rice Hotel by the Oil Equipment & Engineering Exposition Thursday. Franklin pleaded with oil men to "clean house" and get together to forestall a federal dictatorship or the making of a public utility out of the oil business.

He praised Secretary Harold L. Ickes and denied that the secretary was attempting to make a public utility out of the oil business. He said Ickes had been quoted in some publications as being in favor of this but that Ickes had told him that he was not in favor of such a course.

He said many oil men had believed Ickes was in favor of either a federal dictator for the oil industry or for making it a public utility because Ickes had said in a speech in Dallas that "unless you fellows can get together and work out your own salvation your industry is heading for a federal dictator or public utilityship."

He said Ickes was a straight shooter and did things without mental evasion or equivocation.

He praised the new Thomas oil bill and urged its support. He condemned the new NIRA bill of Senator Pat Harrison of Mississippi and said that this measure pointed toward a federal dictator for oil.

Houston Show Was Featured by Optimism and Good Exhibits

(Continued from Page 18)

sold for this exposition in its history and the interest manifested in the products on display resulted in a record breaking attendance record. Oil men came from all sections of the United States and many from foreign countries.

One of the feature exhibits at the show was a portable rig inside convention hall which actually drilled. All necessary equipment for the operation was in service on this job, including a blowout preventor. The well was not allowed to go to 2000 feet because of endangering the water supply of Houston. It was anticipated that the well would go 2000 feet which would have been interesting to watch because wells that drilled for the water supply at Houston encountered two possible oil bearing sands.

Prizes were awarded for the best displays. The judges were Chase E. Sutton, general manager Pure Oil Company; Paul Hubbard, assistant superintendent of production, Gulf Production Company; E. C. Lowry, assistant production manager, Shell Petroleum Corporation, and W. T. Doherty, chief petroleum engineer, Humble Oil & Refining Company. The judges based their decision on methods in which the equipment was displayed as well as on the general appearance and beauty of the booth. Size was not a factor and tool or machinery in operation or those being demonstrated were given credit for same. Those winning prizes are as follows: Halliburton Oil Well Cementing Company, first prize; George E. Failing, second prize; Texas Iron Works, third prize; Union Carbide and Carbon Company, fourth prize; Norvell-Wilder Supply Company, fifth prize; McClatchie Manufacturing Company, sixth prize.

Many events of different kinds were held which were enjoyed by the various visitors to the exhibition. The golfers enjoyed a tournament held at the Brae-Burn Country Club. Prizes were awarded for the winners. A banquet was held at the City Auditorium by the "Wildcatters". The hall was crowded to capacity and the banquet was enjoyed by all those who attended. Visiting ladies were furnished with free tickets to a bridge luncheon given by the Brae-Burn County Club. In addition to this, many other trips and events were scheduled for their entertainment while the show was in progress. A trip through the Houston Channel was provided by the Post of Houston for all the exhibitors and visitors. The trip was made on the Port Commissioner's launch, the R. J. Cummings, which included a trip through the entire channel and to various other industrial sections. The Houston Real Estate Board provided transportation for the return trip.

With the closing of the exhibition for 1935, the management has already sold aditional space for the 1936 show and states that the Seventh Annual Equipment and Engineering Exhibition will be even larger than the show which just closed. The 1936 exposition will be held in Houston, April 20 to 25 inclusive.

Shell Refining Team Wins Safety Contest

Houston.—Shell Petroleum Corporation's team from the Houston refinery won first prize in the second annual Gulf Coast Safety Contest, held April 12. The team scored a total of 93¾ points out of a possible 100.

Magnolia Petroleum Company's refinery team from Beaumont won the honors in the artificial respiratory contest, but only after a close contest with the Louisiana Oil & Refining Company refinery team from Shreveport. The two teams really tied in the contest, but the Magnolia team was given the award when it outscored the Louisiana team in a contest having other tests.

The contest was sponsored by the Oil Equipment & Engineering Exposition. Loving cups were given to the first and second place teams.

It was one of the largest contests of its kind ever held. The entry list included sixteen teams as follows:

Shell Petroleum Corporation two teams, Kilgore production department and Houston refining team.

Magnolia Petroleum Company three teams, refinery department, wax department and pipe fitting team, all from Beaumont.

The Texas Company three teams, West Tulsa refining team, Tomball production department team and the Port Arthur marine department team.

Humble Oil & Refining Company three teams, production department at Thompson, Texas, Tomball drilling department and Baytown refining department.

United Gas Company's Beeville, Texas, team.

Empire Pipe Line Company's Gladewater team.

Louisiana Oil & Refining Company three teams; two pipe line department teams and one from the refining department.

Eastern Division A. P. I. Meeting Dates Announced

Pittsburgh, Pa. — Formal announcement of the Annual Spring Meeting of the Eastern District of the Production Division of the American Petroleum Institute to be held at the William Penn Hotel here on June 5 and 6, 1935, was recently issued by District Chairman J. H. Newlon.

Many papers on vital subjects to the oil and gas industries will be prepared and presented at this meeting by practical operators, these papers to include: "Future of natural oil producing methods in the Eastern United States Oil fields"; "Flooding—past and present, together with its future possibilities"; "Latest methods of pumping oil, including equipment"; "Latest methods of fluid removal from gas wells"; "Acid treatment of oil and gas bearing formations"; "Past experiences and future possibilities of locating subsurface structures by Seismograph in the Eastern Oil and Gas Fields"; "Plugging off permeable sand lenses in repressuring projects."

On Wednesday evening, June 5, the Annual Stag Dinner will be held, with F. F. Schauer, Equitable Gas Company, as Toastmaster, followed by entertainment to be rendered by professionals. At the final session on Thursday afternoon, the annual election of officers for the Eastern District for the years 1935-1936 will be conducted.

Membership in the Eastern District of the American Petroleum Institute comprises oil and gas operators from as far east as the states of New York and New Jersey; west to Illinois; north to Michigan; and south to Kentucky and Virginia, and it is now expected that the attendance will number close to the thousand mark.

New Jersey Pipe Line Officials Hold Conference

Tulsa.—Answers as to the probable purpose of the Standard Oil Company (New Jersey) pipe line conference held here on Monday, April 8, were as numerous as the guessers. A plan for the exchange of crude oil between the Gulf Coast and Mid-Continent markets was one of the guesses. A discussion of reconditioning and new construction on the New Jersey systems proved a popular guess, as did the subject of taxation and pipe line divorcement. The facts so far as they are publicly ascertainable are the representatives of the pipe line subsidiaries of the New Jersey company were in conference during the day and at least a part of the group left for Oklahoma City the following day.

The following executives were in attendance: H. S. Austin, former president of Tuscarora Pipe Line Company and Ajax Pipe Line Company and more recently the directing head in the construction of the now famous Iraq line from Mesopotamia to the Mediterranean sea; E. H. Leroux, president of Oklahoma Pipe Line Company and Ajax Pipe Line Company; R. V. Hanrahan, president of Humble Pipe Line Company; F. R. McGrew, president of Standard Pipe Line Company; S. W. Day, W. B. Fulton, and J. W. Cason, Standard Pipe Line Company; J. A. Neath, O. Q. Lomax, H. M. Stevenson, and N. V. Truly, Humble Pipe Line Company; Homer M. Eagles, T. B. Scott, Jr., and A. H. Weisgerber, Standard Oil Company (New Jersey); E. H. Barlow and C. H. Bunn, Jr., Standard Oil Development Company; W. E. Beckner, Henry Hoffman and E. J. Lewis, Tuscarora Pipe Line Company; H. L. Trelease and O. C. Roddy, Colorado Interstate Natural Gas Company; W. G. Sexton, L. C. Stevens and Henry Wheatley, Imperial Pipe Line Company of Sarnia, Ontario; Geo. T. Rhodes, Ford, Bacon and Davis, operating engineers of the Interstate Gas Company; J. R. Doles, R. H. Bowens and S. V. Kane, Ajax Pipe Line Company, and Floyd E. Waterfield, Jr., Oklahoma Pipe Line Company.

Gas Measurement Short Course Dates Are Set

Norman, Okla.—The Southwestern Gas Measurement Short Course, held annually at the Engineering Building of the University of Oklahoma at Norman, Oklahoma, will be held this year on April 23, 24 and 25. The dates were selected by the general committee in a meeting at Norman, January 21, and plans were made for the program for the 1935 course. University professors and representatives of manufacturers of gas measurement equipment conduct the short course each year for the benefit of members of the natural gas industry charged with responsibility of measurement of gas. Classes are open also to engineering students of the university who take advantage in large numbers of what the opportunity offers.

Registration at the 1934 course was 390 and was representative of 17 states and four foreign countries, the latter being Argentina, Belgium, England and Persia.

President W. B. Bizzell of the University of Oklahoma and J. H. Felgar, dean of engineering, give the course their enthusiastic endorsement and cooperation, while Professor W. H. Carson of the engineering factulty is active director of the course. The purpose of the project is to increase the accuracy of measurement and the efficiency of regulation for the better serving of the public, more accurate and equitable adjustment of purchase and sale of natural gas and the dissemination

Southwestern Gas Measurement Short Course—General Committee

Left to right: Front row—R. D. Turner, G. B. Lane, W. R. McLaughlin, D. C. Williams, Prof. W. H. Carson, J. H. Satterwhite.

Middle row—E. E. Stovall, *R. W. Hendee, *Dean J. H. Felgar, L. G. Rheinberger, V. C. Jarboe, Eugene Metz, Gilbert Estill.

Back row—Max Watson, A. J. Kerr, J. J. Hassler, G. W. McCollough.

***Not member of committee.**

through the industry of correct information regarding the highly technical engineering problems involved.

The program for the 1935 course is being arranged by a committee under chairmanship of R. D. Turner of Tulsa. It will be announced in detail early in March. D. C. Williams of Ponca City is chairman of the general committee for 1935. The subcommittee chairmen are: W. H. Carson, Norman, banquet, entertainment and arrangements; G. W. McCollough, Bartlesville, exhibits; Ray Roundtree, Houston, Texas, study of practical methods; Max Watson, Amarillo, publications, and E. F. McKay, Oklahoma City, registration.

Other members of the 1935 general committee are: W. R. McLaughlin, Gilbert Estill, Ray E. Miller, W. F. Lowe, J. H. Satterwhite, G. B. Lane, B. L. Maulsby, and L. G. Rheinberger of Tulsa; E. E. Stovall, A. E. Higgins and D. A. Sillers of Dallas; G. P. Bunn, V. C. Jarboe and F. D. Franks of Bartlesville; Fay C. Walters of Kansas City, Mo.; E. A. Clark of Pittsburgh, Pa.; Earl Kightlinger of Shreveport, La.; John H. Baxter of Ashland, Ky.; C. B. Day of Blackwell, and B. P. Stockwell of Oklahoma City.

Supreme Court Hears Case Involving Principles of Oil Code

(*Continued from Page 11*)

fecting interstate commerce or the protection against waste of such a natural resource.

It said it also was arguable that the term "fair competition," taken in connection with the declaration of policy of Section 1 of Title I of the Act, establishes legislative standards of regulation under which the specific standards of the code sections recited in the bill of complaint are a matter of administrative detail.

A majority of the Circuit Court, it was related, is of the opinion that the National Industrial Recovery Act is otherwise authorized by the Constitution, and that the bill in other respect states a cause of action. Doubt has arisen among the judges, however, concerning the above question regarding the sufficiency of standards in the Act.

The oil men urged a prompt determination of the case, as did the Government officials, in view of the expiration of the law on June 15, and the declared policy of the President to seek a continuance of code administration of industry engaged in or affecting interstate commerce. Recognition also was given by the lower court to the fact that legislation to this effect has already been presented in Congress and to the fact that a great number of codes will be affected by the ruling on the questions certified by the Court.

"Decision by this (Circuit) Court, followed by the slower process of certiorari," the statement said, "may cause delay harmful to the parties and to the obvious public interest."

The Supreme Court has accordingly announced it "desires counsel for the respective parties to file briefs on or before April 25, 1935, upon the question whether the appeal described in the certificate presents any question other than whether the District Court committed an abuse of discretion in granting an interlocutory injunction."

It is expected that almost simultaneously the Supreme Court will rule on wage and hour provisions of codes as attacked in the Schechter live poultry case in which the government has announced it will take an appeal from the decision of the Second Circuit Court in New York. The latter had ruled the wage and hour provisions to be unconstitutional.

A previous ruling of the court dealt with the delegation of legislative authority to the President under the so-called "hot" oil provisions of the law, in which it held that Congress thus had transcended its powers under the constitution. Because of this decision, Congress undertook the redrafting of Section 9(C) of the Act.

Four Texas Well Spacing Cases Before Supreme Court

Austin, Texas.—The Texas Supreme Court last Wednesday heard extensive arguments on the validity of Railroad Commission Rule 37, the regulation governing the spacing of wells in Texas.

Four cases were before the court. Each case involved the question of subdivision of a lease in such a manner that more wells were drilled than would have been allowed under commission rules had the property been developed as a unit.

This is the first time in many years that a case involving the spacing rule have reached the highest court. For that reason the decision is of the utmost importance to Texas oil operators.

Attorneys present believe that the validity of the rule itself is in question, although only one phase of the matter was dwelt upon in the arguments.

Questions from the bench indicated that the individual members of the court in some instances were at least doubtful of the right of the state to control the spacing of wells through the operation of the police powers.

Chief Justice C. M. Cureton indicated he thought that as a matter of equity, such a rule could be more readily sustained.

The judges also asked why it would not be equitable to allow a well on a five-acre tract to produce only half as much as a well on a ten-acre lease. They indicated that they believed this method of allocation of production might discourage the drilling of additional wells.

Attorneys in the case explained the method of per-well allocation, based on potentials, which is now operative in East Texas, where all the leases are located which are involved in these suits.

Because of the far-reaching effect of the decision, it is expected that the court will not hand down a decision soon.

J. W. Flint Heads Electrical Association

Dallas.—J. W. Flint, pipe line official of The Empire Companies, Bartlesville, Okla., was elected president of the Petroleum Industry Electrical Association at the three-day annual meeting concluded here April 13. He succeeds Morris Chambers of Shreveport, of Standard Pipe Line Company, Inc. The membership voted to hold its next annual meeting at Tulsa.

F. P. O'Connor, superintendent of the telephone and telegraph department of Stanolind Pipe Line Company, Tulsa, was elected vice president; H. E. Brown, assistant superintendent of the telephone and telegraph department of Sinclair Prairie Pipe Line Company, Independence, Kansas, was re-elected secretary-treasurer. Brown has fulfilled this office since the association was formed in 1928.

Annual report on activities of the association recorded an increase in membership the past year, and the affairs of its monthly publication were reported to be favorable.

C. P. ERNIE and Okey Wheeler, Michigan representatives of Ohio Producing and Refining Company, have been transferred to East Ohio Gas Company at Cleveland, Ohio, following transfer of East Ohio Michigan holdings to Carter Oil Company.

Gypsy Takes Colorado Leases

Denver, Colorado.—Gypsy Oil Company is reported to have made a deal with Union Pacific Railroad for lease on its lands extending from Limon in northwestern Lincoln County, eastward a distance of approximately 85 miles to the Kansas-Colorado line. According to the report Gypsy has guaranteed to complete a geophysical survey within one year and to start two test wells within two years. Union Pacific is to retain some acreage around the test wells. It is known that the Gulf subsidiary has been showing interest in Colorado and for several months has had a geological party working surface in this portion of the state.

Greta Producing Property Purchased

San Antonio.—Dash Production Company sold its one-half interest in 151 acres producing property in Greta field of Refugio County to Blanco Oil Company for an unannounced consideration reported to be around several hundred thousand dollars cash. The deal included seven producing wells from the 4400-foot sand, flowing approximately 475 barrels of oil per day. Blanco Oil Company prior to this deal held one-half interest and this deal gives it full ownership. Both companies are of San Antonio.

Yeager Pool

Yeager, Okla.—The Texas Company late in the week announced location for No. 1, NW NW SW 4-8n-10e, a wildcat test four miles northeast of here and two miles northeast of the old Yeager pool in northern Hughes County. Production was discovered in the Yeager pool in 1917 and in 1925 several deeper wells were completed. Depth to Wilcox sand is approximately 3920 feet.

Development Plans for Four Fields Announced

Washington, D. C. — Approval of plans for the development of two fields in Texas and one each in Oklahoma and Louisiana was today announced by Oil Administrator Harold L. Ickes. Under the programs outlined, not more than 75 wells are to be drilled to production during the current year in the North Cowden area of Ector County, Texas, and the operators are to make a fair and equitable allotment of the wells among themselves before May 8. In the Cockfield formation of the Raccoon Bend field in Austin County not more than 45 wells are to be drilled to production. The plan for Bosco pool in Acadia, St. Landry and Lafayette Parishes, Louisiana, permits the completion of 50 wells in addition to the wells not completed under the plan for 1934, while in Wilzetta pool in Lincoln County, Oklahoma, a maximum of 12 wells are to be drilled to production this year.

East Lucien Test Is Nearing Sand

Perry, Okla.—Magnolia Petroleum Company's Viets 1, C SW SW 27-20n-2w, in the East Lucien extension of southwestern Noble County, encountered Oswego lime at 4545 feet and was drilling ahead below 4900 feet. It is the second 40-acre location south of Sinclair Prairie Oil Company's Cawood 1 which extended production one mile to the east late in December, 1934.

Fish Pool Given Northward Extension

Wewoka, Okla.—Champlin Refining Company extended the Fish pool of Seminole and Hughes counties one-quarter mile to the north during the week when Sea 7, SW NE SE 30-7n-8e, obtained a hole full of oil from Simpson dolomite at 4170 to 4186 feet. Total depth is 4202 feet.

J. W. BRADBURY, general agent for Mexican Gulf Oil Company, Tampico, Mexico, was in Houston during the past week to attend the Houston Oil Show and Wildcat Dinner.

Pittsburg County Play Is Extended Southward

McAlester, Okla.—Pittsburg County in the southeastern portion of the state continues to enjoy an active lease play which was started several weeks ago with blocking on and around the well known Savanna Anticline. The most recent block to come to light through county records is that taken by Ralph H. Knox to the south of McAlester in the southern portion of the county. The block includes: sections 9, 10, 11, 12, 16, 17, 18, 19, 20, 29, 30, 35 and 36-2n-15e; sections 23, 25 and 26-3n-14e; sections 7 and 18-3n-17e; sections 21 and 27-5n-12e; sections 1, 12 and 36-5n-13e; sections 1 and 36-4n-15e; sections 25, 33, 34 and 36-4n-16e; sections 2 and 3-3n-14e, and sections 1, 2, and 12-3n-16e, a total of approximately 5500 acres.

Test South of Fault Produces at Fitts

Ada, Okla.—Amerada Petroleum Corporation staked location for Geo. Smith 1, SE SW NW and Geo. Smith 1-A, C S½ NW 28-2n-7e, more than a mile east of production in the Fitts pool of southeastern Pontotoc County. This is Amerada's first activity in the area.

The outstanding news of the week was the discovery, two locations south of established production in the Fitts pool, of gusher production from the McLish formation which has not heretofore produced in the area. E. H. Moore et al's Mitchell 1, NW SW NW 31-2n-7e, apparently south of the surface expression of a series of south dipping fault planes, missed the formations from Mayes to Viola lime and went into Bromide for-

Oklahoma City Potential Declines 39 Percent This Year

Oklahoma City.—As of April 1, 1935, the 938 producing wells in the Oklahoma City pool had a combined potential rating of 590,092.79 barrels daily compared to 974,831.71 barrels for 962 wells on January 1, 1935. This is a composite decline of 384,738.92 barrels or 39.46 percent. In the April 1 report there were 22 wells without potential ratings and in the January 1 report only four, so the actual decline is somewhat less than the figures shown above. A comparison of the status as of January 1, compared to April 1, by zones is shown in the following tabulation:

Zones	No. of Wells 1-1-35	No. of Wells 4-1-35	Potential 1-1-35	Potential 4-1-35	Per Cent of Change	Gross Stocks 1-1-35	Gross Stocks 4-1-35
Wilcox	547	544	943,038[1]	560,180[2]	—40.6	253,827	390,044
Simpson	410	389	27,649[3]	25,767[4]	— 6.8	149,713	153,258
Fault Line	5	5	4,145	4,145		1,098	1,269
Totals	962	938	974,832	590,092	39.5	404,638	544,571

[1]Four wells without potential ratings. [2]22 wells without potential ratings. [3]Seven wells without potential ratings. [4]Six wells without potential ratings.

mation at 4045 feet. According to correlations from the field the McLish was encountered at 4210 feet and from 4308 to 4345 feet the well made 150 barrels per hour on a two-hour test. Another sand was reported from 4405 to 4415 feet with an increase of flow to 161 barrels in 25 minutes. All production tests have been made through the drill pipe so the well probably is capable of making better than 400 barrels per hour at present depth. Two sand zones are known to exist in the McLish formation.

Continental Oil Company has staked location for No. 1, C SW NW 12-1n-7e, slightly over a mile northeast of Paramount Petroleum Company's Graham 1, SW SE SW 13-1n-7e, which is waiting on cement to set after drilling to 3478 feet and plugging back to shut off water. This test is a wildcat 5½ miles southeast of the Fitts pool.

Logan Wildcat Is Ready to Wash in

Navina, Okla.—Sinclair Prairie Oil Company and Slick-Urschel Oil Company's Koatsch 1, SW SW SW 23-15n-3w, was one of the most closely watched wildcat tests in the state as it prepared to wash in on Saturday, April 13. After finding a small showing of oil and gas in the Upper Simpson operators encountered top of the Wilcox sand at 6218 feet and drilled to 6254 feet without recovering saturated cores.

The test is located 4½ miles southeast of here and 8½ miles northeast of the Edmond pool which is nearest production. Correlated on top of the Wilcox sand it is 621 feet higher than Summit Drilling Company's Dunbar 1, Section 25-15n-4w, 4½ miles to the west and 79 feet higher than Anderson Kerr et al's Linn 1, Section 17-14n-2w, 5½ miles to the southeast. Compared to Shell Petroleum Corporation et al's Hirzel 1, a dry hole in 7-16n-2w, eight miles to the north and slightly east, it is 184 feet low. Most if not all this difference can be accounted for by regional dip. Three other interesting wildcat tests are being drilled in the southwestern portion of Logan County.

Choctaw County

Ft. Towson, Okla.—Burns et al announced location for No. 1, NW ¼ Section 4-7s-20e, 3½ miles southeast of here in southeastern Choctaw County in the southeastern portion of the state. Definite description of the location was not available. Nearest production is more than 50 miles to the northwest in northeastern Atoka County.

40 New Tests Are Started in Oklahoma

Tulsa.—Oklahoma areas showed a slight increase in new work during the week when scouts made 40 first reports from 15 counties. Osage County led the list with eight starts five of which were in the South Burbank pool; Creek County was second with seven principally from the Olive area; Oklahoma and Stephens counties were third with four each, Pontotoc County had three; Carter, Jackson, Pottawatomie, and Seminole counties, two each; and Logan, Marshall, Muskogee, Okfuskee, Tillman and Tulsa, one each.

The Edmond pool of northwestern Oklahoma County came into the gusher production picture with two completions for total initial of 23,214 barrels, being overshadowed only by the Fitts pool which accounted for 35,648 barrels from three wells. The Crescent pool of western Logan County was rated third with 6940 barrels from two wells, leaving a total of 10,096 barrels from the remaining 18 oil wells or a total initial of 75,898 barrels from 25 oil wells. The completion reports also included two abandoned locations, one test spudded and abandoned and 13 dry holes, a total of 41 completions which involved 115,226 feet of drilling. Included in the drilling footage were four old wells deepened 2203 feet, one wildcat oil well whose total depth was 4196 feet and two wildcat dry holes with combined total depth of 7093 feet, a total of 11,239 feet of completed exploratory drilling.

West Seminole Pool Extended Half Mile East

Seminole, Okla.—Wood Oil Company extended production approximately one-half mile to the east in the West Seminole pool during the week when Henry 1, SW NW SW 28-9n-6e, swabbed 910 barrels in 24 hours from 22 feet of Wilcox sand topped at 4099 feet. The hole was reported to have some cavings on bottom and the well probably will make at least 1000 barrels when completed on the pump.

Oklahoma Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
CARTER COUNTY—		
Shell, Wirt Franklin 46, sw nw ne ne 8-4s-3w	75	1150
GARFIELD COUNTY—		
Herndon Drlg. Co., Allen 1, ne ne sw 35-24n-3w	*	5096
Sinclair Prairie, Walker 29, se nw se 24-22n-4w	lcn.	abd.
GRADY COUNTY—		
Herbert & Workman, Mechlenberg 1, nw se se 6-3n-5w	*	2041
HUGHES COUNTY—		
Magnolia, Hayes 2, sw sw nw 16-7n-8e (otd 2925)	*	2991
JACKSON COUNTY—		
Selby Oil Co., Holt 1, se se sw 15-2n-20w	*	1998
LINCOLN COUNTY—		
Texas Co., Hoover 2, nw ne se 31-14n-4e	565	3062
Slick-Urschel, Altoff 2, se ne nw 18-14n-4e	*	5015
LOGAN COUNTY—		
Eason Oil Co., Katscher No. 24, nw nw sw 34-17n-4w	5732	6197
Gypsy & Carter, Knowles 3, sw sw nw 34-17n-4w	1208	6220
MARSHALL COUNTY—		
G. L. Priest, Cope-Sublet 3, se ne sw ne 1-8s-5e	15	554
MUSKOGEE COUNTY—		
P. Boyle, Lowe 10, sw se ne se 19-15n-16e	5	1208
NOBLE COUNTY—		
Stanolind-Amerada, Frederick 1, csw se 28-20n-2w	800	5142
Stanolind et al, DeBord 2, ne nw sw 27-22n-2w	1871	4893
Voss 6, ne se se 28-22n-2w	2294	4854
OKFUSKEE COUNTY—		
Carter, Dill 2, cne se 2-11n-8e	1125	3906
OKLAHOMA COUNTY—		
Marathon, Dahl 3, nw nw se 31-14n-3w	¶13½-6762	6695
Mid-Continent, Young 2, sw sw ne. 31-14n-3w	¶27½-16,452	6694

Company, Well and Location	Init. Prod. Bbls.	Depth
OKMULGEE COUNTY—		
J. E. Wallace, Colbert 5, ne ne sw se 14-14n-14e (otd 1745)	*	2510
OSAGE COUNTY—		
Norbla Oil Co., 2, se se nw nw 9-20n-10e	*	2637
C. R. Gray et al, 7, ne ne sw sw 27-21n-9e	35	1143
Johnson O&R Co., 11, sw sw nw se 30-21n-9e	70	338
H. F. Worley, 4, ne ne ne sw 16-25n-6e (pb 2807)	*	2810
H. M. Mosher, 4, se se sw se 22-28n-10e	10	1307
PONTOTOC COUNTY—		
Carter Oil Co., Harden 6, se se sw 30-2n-7e	12,728	4120
Magnolia, Hardin 4, sw ne nw 30-2n-7e	12,336	4338
Stanolind, Harden 8, ne sw sw 30-2n-7e	10,584	4180
H. P. Baskin, Slick-Urschel 1, ne ne sw 9-5n-6e	spd &	abd.
POTTAWATOMIE COUNTY—		
Phillips, Booze 1, sw ne se 9-7n-4e	80	4221
Seminole Supply Co., McGee 3, sw sw nw 10-7n-4e	*	99
Magnolia, Gates 2, se sw nw 20-9n-5e	116	4239
Papoose Oil Co., Marks 2, nw se nw 32-10n-6e (otd 3878)	*	4410
SEMINOLE COUNTY—		
Wells, Siler & Dearders, Davis 1, se se nw 30-7n-8e	*	1882
Oklahoma Oil Corp., Patterson 1, nw nw se 12-9n-6e	lcn.	abn.
Sinclair Prairie, Boring 1, ne nw nw 19-9n-7e (pb 4057)	20	4060
Carter, Black 1, cne sw 14-10n-6e	1091	4146
Cully 1, ce½ ne nw 18-10n-6e	1896	4595
STEPHENS COUNTY—		
Clark & Cowden, Payne 4, se sw se sw 2-1n-5w	20	1289
Lesh Brothers, Crosby 2, se sw sw sw 23-1s-5w (pb 694)	8	750
L. Sykes, B. Dolan 1, cw½ sw nw nw 15-1s-8w (otd 2101)	*	2941
Mulkey 5, ne ne se ne 16-1s-8w	*	2145

*Failures; †Junked; ¶Mil. cu. ft. gas.

Kansas Pool Yields Large Initial Output

Wichita, Kansas.—New work declined approximately 33 1/3 percent during the week in Kansas while the number of completed oil wells increased more than 50 percent along with an increase of almost 300 percent in initial production. Rice County led the state in first reports with seven starts in three areas; McPherson County was second with two, and Butler, Chautauqua, Elk, Ellsworth, Reno, Russell and Sedgwick counties, one each, a total of 16 first reports from nine counties.

As usual the Burrton pool of northeastern Reno County led in initial production with 13,939 barrels from 11 wells; the Lorraine pool of southwestern Ellsworth County came into prominence with 5861 barrels from four wells, and several pools in Rice County yielded 5012 barrels from six wells. With three Russell County wells which yielded 2510 barrels initially, the total production from above sources was 27,322 barrels from 24 wells, leaving 3197 barrels from the remaining nine completed oil wells or a total of 30,519 barrels from 33 wells. Three dry gas wells added 14,750,000 cubic feet of gas reserves. Two abandoned locations and four dry holes rounded out the completion report of 42 completions which involved 114,798 feet of drilling including 92 feet in four old wells, 3530 feet in a wildcat discovery well and 6254 feet in two wildcat dry holes.

Rice Discovery Waiting on Acid

Bushton, Kansas.—Allison, Fitzwilliams et al's Stumps 1, NW NW SW 4-18s-10w, new discovery 2¼ miles southwest of here in northwestern Rice County, was estimated at 40 barrels per day from Siliceous lime at 3229 to 3261 feet, the total depth.

Prospects Bright for Stafford County Pool

St. John, Kansas—Stafford County's chances for a new pool seemed assured late in the week when Lario Oil & Gas Company et al's Tudor Morgan 1, SE SE NW 23-24s-13w, three miles southeast of here in the south central portion of the county, had 2500 feet of oil standing in the hole from Kansas City lime topped at 3508 feet and drilled to 3597 feet.

Lake, Kansas.—L. H. Wentz has announced location for Skinner 1, C NW NE 29-31s-14w, wildcat test three miles southwest of here in northwestern Barber County. Nearest and only oil production in the county is 18 miles to the east.

Fifteenth Rice County Pool Opened

Raymond, Kansas.—Gypsy Oil Company's Kessling 1, NW NW SW 10-20s-9w, fifteenth pool for Rice County, pumped 201 barrels, was treated with 1000 gallons of acid and awaiting reaction. Production was found several weeks ago in Siliceous Lime topped at 3239 feet and drilled to 3261 feet. It is in the southwestern portion of the county about two miles from the Sharpe pool.

Five Tribes Lease Sales Has Poor Response

Moskogee, Okla.—Officials of the Five Civilized Tribes' Agency here were disappointed on Thursday, April 11, when of the 161 tracts of restricted Indian land offered for oil and gas lease only 89 were sold for an average bonus of $2.76 per acre. A total of 8066.04 acres were sold for $22,282.31. The offering was 14,845.96 acres scattered through a large number of counties. Confusion as to the purchase of one tract when two companies thought they were successful bidders led the department to withdraw the lease and it will be offered at the next sale. The Texas Company was one of the most active of the relatively small number of bidders who attended the auction.

354 Drilling Permits Are Issued in Texas

Austin, Texas.—Permits to drill in Texas increased last week as the Railroad Commission approved applications for 354 new wells.

East Texas again took the lead among the districts with 185 applications filed. There were 83 in Rusk County, 80 in Gregg County, 11 in Smith and 11 in Upshur County.

The Gulf Coast area reported 47 new locations, with 19 in Harris County, while Southwest Texas trailed with 30, of which seven were in Hidalgo County.

North Texas listed 24 and there were

Kansas Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
BUTLER COUNTY—		
Trees & Harwood, Henley 1, sw se ne 7-24s-8e	*	2570
McGinnes & Cox, Houston 1, sw sw ne 1-25s-3e	130	2694
Vickers Pet. Co., McCramer "C" 1, cwl nw nw 1-25s-3e	213	2716
ELLSWORTH COUNTY—		
Twin Drilling Co., Rolfs 2, nw nw sw 13-17s-9w	1826	3201
Vickers Pet. Co., Jannsen 1, sw sw nw 13-17s-9w	1747	3203
Atlantic, Rolfs 2, ne ne se 14-17s-9w	1523	3200
Rolfs 3, nw ne se 14-17s-9w	765	3197
GREENWOOD COUNTY—		
Swartz, Kulander 1, nw nw ne 33-23s-13e	*	1050
O. O. Owens, Dales 1, sw se se 2-24s-10e	*	2240
Tippy et al, Stonebreaker, se se se 32-27s-11e (pb 1150)	¶3	1698
HARVEY COUNTY—		
Prunty et al, Davis 1, ne ne ne 6-22s-1w (pb 3320)	147	3530
McPHERSON COUNTY—		
Lario Oil & Gas Co. & Shell Pet. Corp., Gratton 2, nw ne sw 24-19s-9w (otd 3409)	5	3419
F. C. Johnson, Good 1, se se nw 13-19s-3w	¶1¾	3115
Roth et al, Almen 3, nw nw se 13-19s-3w	1445	3006
RENO COUNTY—		
Barnsdall Oil Co., Sabin "C" 11, se ne se 11-23s-4w	572	3616
Skelly Oil Co., Sabin 5, sw ne sw 11-23s-4w (pb 3465)	¶5½-6	3875
Derby Oil Co., Ackley 4, nw se sw se 14-23s-4w	226	3596
National Union Co., Ackley 4, sw se se 14-23s-4w	lcn.	abd.
Olson Oil Co., Downie 5, se se ne 14-23s-4w (pb 3400)	¶10	3837
Olson & Shell, Downie 9, sw nw ne 14-23s-4w	886	3606
Amerada, Wilson 3, se nw sw 23-23s-4w (pb 3619)	1475	3629
Olson & Shell, Blake 9, sw ne sw 23-23s-4w	1701	3605
Duckworth 5, ne nw ne 23-23s-4w (pb 3611)	777	3615
T. M. Deal Oil & Gas Co., McElwain 4, sw ne se 34-23s-4w	3985	3587
Olson & Shell, England 2, ne nw se 34-23s-4w	2353	3604
Dickey & I.T.I.O., J. Baughman 1, ne nw ne 3-24s-4w	624	3605
Gypsy, Myers 1, ne ne nw 3-24s-4w	1334	3603
RICE COUNTY—		
Keith, Volkland 1, se ne se 20-19s-9w (otd 3225)	1042	3242
Sinclair Prairie, Volkland 1, ne se se 20-19s-9w (otd 3225)	472	3239
Empire, Myers 2, sw sw sw 21-19s-9w	1419	3209
Sinclair Prairie, Sharpe 2, nw nw ne 7-20s-9w	643	3267
Phillips, Mezger 4, sw nw ne 21-20s-10w	315	3345
Texas Co., S. W. Grove 7, sw sw ne 29-19s-9w	1121	3219
RUSSELL COUNTY—		
Hartman & Blair, Garrett 1, sw sw nw 24-13s-12w	lcn.	abd.
Palmer, Killion 2, cs½ sw nw nw 27-13s-14w	336	3271
J. J. Hall, Miller 1, sw se se 30-14s-13w (otd 3111)	792	3162
Phillips, Holland 2, nw sw sw 13-14s-15w	1382	3235
SEDGWICK COUNTY—		
Shell, Lygrisse "A" 10, se nw ne 15-26s-2e	738	3183
SUMNER COUNTY—		
Sinclair Prairie, Kansas 2, nw sw sw 28-31s-1w	194	3690
Slick, Pryor, Lockhart & Darby Oil Co., Peasel 2, sw nw nw 33-31s-1w	303	3689
Tom Palmer, Wentworth 1, nw nw ne 9-35s-2e	*	3684
WOODSON COUNTY—		
Theta Oil Co., McClaskey 10, se sw se nw 31-23s-14e (pb 1712)	22	1716

*Failures; †Junked; ¶Mil. cu. ft. gas.

three approved for the adjacent West Central Texas area.

In West Texas 19 new locations were reported and there were 17 in the Panhandle district.

East Central Texas listed nine.

Red Lake Well Is A Dry Gas Producer

Palestine, Texas.—Dry gas production estimated at 5,000,000 cubic feet daily through ⅜-inch choke on formation tester was registered by J. B. Daniel Oil & Royalty Company's Ball Estate 2, second test by the company on the Red Lake structure, Freestone County. Drill stem test was made in Woodbine sand at 4835½ feet, with an elevation of 421 feet. Casing will be cemented on top of the sand, and the hole deepened to try for oil production.

This prospective gasser is about 1900 feet north of the company's discovery gasser on the Ball land, which was completed last June after plugging back from 5003 to 4854 feet.

Gulf Production Company and Humble Oil & Refining Company's O. G. Rogers 1, Daniel Parker Survey, wildcat in southwestern Anderson County and about five miles southwest of Elkhart, was awaiting drill stem test late last week after recovering five feet of sand and sandy-shale to top of Sub-Clarksville sand after coring to 5285 feet, with an elevation of 301 feet. Chances for a gas well were considered favorable.

In the Camp Hill area, Anderson County, Gulf Production Company's M. Maddox 1, David Stilts Survey, logged base of Austin chalk at 5185 feet, with an elevation of 657 feet, and prepared to core the Sub-Clarksville horizon immediately below. The company's L. B. Ross 1, J. C. Rosson Survey, completed installation of surface connections to make a test for production in the Sub-Clarksville at 5136½ feet after cementing seven-inch pipe at 5106 feet.

Shelby County Block Assembled for Test

Marshall, Texas.—W. J. Reynolds of Kilgore, has assembled a 10,000-acre block of wildcat leases 15 miles west of Center, Shelby County, and centering in the Polley Survey, for a contemplated 4000-foot test. Magnetometer work was done on the block recently by W. R. Julian of Shreveport.

In Panola County, south of Carthage, Ohio Oil Company has a torsion balance crew at work.

In Cass County, A. D. King, Trustee, has abandoned location for G. W. Allday 1, Robert F. Whittaker Survey. Leases are reported to have expired.

110 New East Texas Wells Include 13 That Do Not Flow

Tyler, Texas.—Completion of 110 wells in the East Texas field the past week set a new record for the current year, and incidentally will be followed by a sharp drop in number of new wells for a month or more. The forecasted decline will be attained by reason of the Sinclair Prairie Oil Company having finished the numerous tests that were under way when the company suspended work on more than 100 authorized tests on March 21, and several other companies have followed the above major lease owner in curbing field activity.

Sinclair Oil Company added 18 flowing wells the past week, including nine on its Mayfield Company 374.74-acre lease, Smith County. The company recorded 20 new producers the previous week.

A survey of development activity in the East Texas field reveals that the number of rotary rigs in active operation has declined to 185, as compared to about 200 several weeks previous. There are 33 other tests on the inactive list, while locations, derricks and rigs listed currently boost total operations to 345. Humble Oil & Refining Company and Gulf Production Company each have 11 rigs in operation. Magnolia Petroleum Company has 27 operations listed on its field report, but only seven of these are active, and nine others are derricks or rigs.

Important extensions have been scored by independents to the north, southeast and east of established deadline for oil production within the past 10 days. J. B. Dial of Overton and others' Fred Newton 1, NWc of 50-acre lease, Wm. Clark Survey, advanced oil production about 2000 feet to the southeast flowing 20 barrels oil per hour from broken sand at 3687-3690 feet, with an elevation of 419 feet. The well quit flowing after a brief gauge, and will be equipped to pump. Joe Sanders et al's Cooper 1, Juan Ximines Survey, widened the Joiner area about 4000 feet to the east in showing for a small producer from sandy-shale formation at 3556-3690 feet. It has an elevation of 367 feet, and also will require pumping equipment.

The surprise completion reported last week as having been scored by Delta Drilling Company's E. H. Hamilton 1, situated 2500 feet due north of the nearest production in the northwest portion of the field in Upshur County, will be followed by the staking of a number of new locations. This outpost is in the SWc of 80-acre lease, Wm. King Survey, and is north of Arsell Oil Company's (Howard Russell) S. C. Salter 1, which was completed late in February flowing 20 barrels of oil hourly by heads from sand at 3766-3771 feet, or 3321 feet below sea level. Delta Drilling Company's extension well flowed 35 barrels hourly from sand at 3771-3774 feet, or 3315 feet below sea level. Erratic sand conditions make it possible for the isolated producer to score production at a higher structural position.

Delta Drilling Company followed through and acquired considerable additional acreage in the area. The company paid $12,500 cash and $35,000 payable from production for lease on the L. Brawley 50-acre lease, situated immediately west of the producer. A cash bonus of $6150 plus $250 per acre payable from production was paid for lease on the Adkins 123-acre lease, situated one-half mile to the north, while one-half working interests were acquired in the McCaughy 17-acre lease and the W. O. Owens 85-acre tract.

Independents continue to complete nearly 50 percent of the new wells although their combined acreage represents less than a third of the field. These small units were credited with 51 of the completions last week, while the major group added 59 wells.

There were 13 non-flowing producers included among the completions the past week. Initial gauges were determined on five wells by pumping, while six others were swabbed to arrive at their rated capacity. Two others were equipped with gas-lift units.

Leasing Activity In Kittrell Play

Houston.—E. B. LaRue's W. D. Ivey 1, near Huntington, Scarbrough Survey, Angelina County, was plugged and abandoned at 1743 feet after plugging back to 1460 feet and testing salt water. This well created some excitement when it was reported showing oil at 1462 to 1466 feet.

Hunter, Inc., of Shreveport, La., is reported to have acquired leases on 33,000 acres of Long Bell Lumber Company land in Angelina and St. Augustine counties. The acreage centers about five miles southeast of the town of Huntington. It is understood that the concern will drill three wells to 2500 feet and then will drill a deep test if the drilling of the three tests warrants it. An independent operator is taking a block two miles northeast of San Augustine, and has approximately 3000 acres under lease now and will drill a test well. Ten miles south of San Augustine, another block is

being taken for a test well. The operators have 4000 acres.

In Walker County, and due west of Huntsville, approxmiately 12 miles a drilling block of 4000 acres is being assembled. A 4000-foot test is to be drilled after trying to assemble an additional 1000 acres before drilling commences.

W. A. Keil's L. W. Huffman 1, in the Kittrell field, C. McEllis Survey, Houston County, has been completed for 15 barrels per day from 2009 feet. The well is located on a 36-acre tract.

Production for the Kittrell field ending April 3, 1935, was Humble Oil & Refining Company, five wells which yielded 4862 barrels; Boone Brothers, three wells, 3906 barrels, and Sun Oil Company, one well producing 557 barrels. Total production for March was Humble Oil & Refining Company 8044 barrels; Boone Brothers, 11,549 barrels, and Sun Oil Company, 557 barrels.

New Winkler County Pool Appears Likely

San Angelo, Texas.—The Winkler County wildcat test of Sid Richardson, Fort Worth, on the J. B. Walton land near SEc SW SW Section 1, Block B-3, PSL Survey, is rated as a strong contender for the discovery of a new producing area for the county through having logged top of brown lime at 2115 feet, or 830 feet above sea level. It occupies the highest structural position of any well in the county, and has encountered gas production at 2352 and 2640 feet. Drilling had progressed to 2680 feet late last week, with the standard rig crews carrying a loaded hole.

The Walton Ranch test is about five miles east by north of the Sayre field, and more than three miles southeast of the Scarborough field. Richardson holds net interest in about 5500 acres, with five eighths interest in the Walton leases obtained from Pure Oil Company for the drilling of a 4200-foot test. Gulf Production Company also is a big lease owner in the immediate area.

Drilling was resumed on Gulf Production Company's McElroy 103, Upton County record depth test late last week after coring dark gray lime formation at 12,296 feet.

GOVERNOR JAMES V. ALLRED announced Friday that he will leave for Washington Monday to attend congressional hearings on the Thomas Federal Oil Control Bill. Attorney General William McCraw and Railroad Commission Chairman Ernest Thompson will also attend these hearings.

East Texas Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
JOINER AREA—		
Atlantic, C. Young-Belrica 6-D (40-ac)	9400	3686
Bailey & Trimble, E. B. Alford 2 (5-ac)	360	3707
W. E. Brown et al, Frederick 4 (11.91-ac)	720	3598
Colonial Prod. Co., S. S. Cook 8 (35.85-ac)	8700	3713
R. H. Dearing & Son, E. McDavid 5-A (78.6-ac)	2400	3725
Delta Drlg. Co., Henson 3-A (20-ac)	480	3565
Henson 4-A (20-ac)	480	3565
J. B. Dial et al, Fred Newton 1	500	3690
Elsep Oil Co., E. L. Pinkston 3 (10-ac)	480	3610
Florence Oil Co. & W. H. McConnell, L. Jackson 3 (27.4-ac)	7200	3803
Great State Oil Corp., M. Smith 5	500	3670
Gulf, W. O. Alford 4 (157-ac)	6000	3750
Guthrie Oil Corp., Frederick 1-B, Tr 2 (6.78-ac)	700	3600
W. B. Hamilton Pet. Co., L. A. Gambrell 8 (54.7-ac)	8000	3662
Humble, R. A. Barksdale 9-B (114.95-ac)	1600	3616
Kangerga 24-A (333¼-ac)	8400	3717
J. Thompson 9 (80-ac)	10,500	3654
Hunt Prod. Co., M. L. Thompson 5 (19.24-ac)	8600	3740
Illinois Oil Co., Mayfield 13 (197.1-ac)	7600	3700
Mayfield 14 (197.1-ac)	4500	3744
S. Lewis & L. B. Ketch, T. O. Wright 2 (1.59-ac)	8800	3716
Lone Pine Oil Co., L. J. Pinkston 3-C (20½-ac)	5500	3667
Alex McCutchin & McMurrey, G. Moore 2 (35-ac)	5000	3820
C. L. McMahon, Ed. Moore & McCulloch, Cook 7 (40-ac)	7400	3723
Marathon Oil Co., H. C. Burton 7 (61¾-ac)	9200	3651
H. C. & G. W. Burton 22 (254.44-ac)	7600	3693
E. E. Moores 24 (201.4-ac)	4500	3675
T. O. Warren 6 (65.69-ac)	5200	3674
Overton Ref. Co., S. & M. Clay 8 (65.26-ac)	720	3634
Sinclair Prairie, W. W. Holland 15 (50-ac)	1200	3700
J. B. Wilson 11 (69-ac)	10,600	3659
Mayfield Co. 32-A (374.74-ac)	10,000	3746
Mayfeld Co. 33-A (374.74-ac)	10,000	3739
Mayfield Co. 34-A (374-74-ac)	10,000	3762
Mayfield Co. 36-A (374.74-ac)	9600	3822
Mayfield Co. 41-A (374.74-ac)	5600	3824
Mayfield Co. 42-A (374.74-ac)	6200	3799
Mayfield Co. 43-A (374.74-ac)	10,000	3771
Mayfield Co. 46-A (374.74-ac)	5600	3836
Mayfield Co. 47-A (374.74-ac)	9000	3813
Sun, L. Cooper 4 (28-ac)	2000	3661
J. J. Denton 9-A (114.2-ac)	3000	3755
Tryway Oil Corp., W. H. Worrell 2 (148-ac)	240	3630
KILGORE AREA—		
Bay Oil Corp., B. B. Peterson 11 (80.65-ac)	12,000	3626
J. Beren et al, Jones 2-B (933.28-ac)	3500	3680
Bowles Oil Co., D. Wells 16 (100-ac)	8800	3642
Burk Roy. Co.-Fair & Thompson, D. Carr 4-B (21-ac)	6200	3521
J. R. Gaskey & E. M. Harter, M. B. Andrews 6 (20.02-ac)	12,000	3650
Gulf, H. C. Alexander 25 (209.01-ac)	6300	3569
M. T. Cole 20 (161.51-ac)	7500	3548
Angus Spear 32 (277.56-ac)	8500	3576
Humble, B. F. Laird 13-A (100-ac)	12,000	3617
S. S. Laird 68-B (568.53-ac)	720	3580
Idaho Oil Co., Dickson 3 (20-ac)	250	3567
Invincible Oil Co., M. B. Weiss 15 (81.27-ac)	11,600	3519
M. B. Weiss 29 (81.27-ac)	11,500	3638
Island Oil Co., J. A. Knowles 4 (16-2/3-ac)	9000	3596
Magnolia, Sam Carr 10 (67.62-ac)	9500	3455
Ben Laird 11 (82½-ac)	11,000	3625
Manahan Oil Co., Nat Bean 6 (25-ac)	9600	3662
Producers Inv. Corp., R. H. Rowland 4 (5.71-ac)	1000	3595
J. I. Roberts Prod. Co.-C. H. Murphy, W. P. Brightwell 4 (3.2-ac)	12,000	3677
Yandell Rogers et al, W. M. Sexton 9 (73-ac)	1200	3684
Royall Pet. Corp., M. Mayfield 4 (31.44-ac)	800	3730
Shell, Elder 8-A (51.51-ac)	7500	3595
J. B. Watson 47 (385.2-ac)	9600	3595
J. B. Watson 48 (385.2-ac)	7500	3614
Sinclair Prairie, S. G. Andrews 26 (200-ac)	9000	3501
A. A. King 38-A (366.7-ac)	9200	3530
A. A. King 39-A (366.7-ac)	9100	3522
A. A. King 41-A (366.7-ac)	9000	3522
A. A. King 42-A (366.7-ac)	9300	3510
A. A. King 52-B (337.6-ac)	9500	3484
A. A. King 53-B, Tr 1 (337.6-ac)	9000	3495
Snowden & McSweeney Co., R. H. Laird 18 (133.1-ac)	11,000	3631
Sun, J. R. Beall 18 (180-ac)	8400	3636
Sutton & Hawkins, J. F. Horton-Shell 2 (103-ac)	750	3575
LONGVIEW AREA—		
Adams & Lyles, Taylor Anderson 12 (62½-ac)	4600	3497
Ark. F O Co., S. G. Smith 6-A (60.15-ac)	9200	3533
Atlantic, S. S. Barton 7 (46.22-ac)	9000	3702
McBee Fisher 12 (58.65-ac)	8200	3503
T. B. Harris 14 (91.54-ac)	5400	3565
G. A. Porter 18 (109.23-ac)	8800	3684
Delta Drl. Co., E. H. Hamilton 1 (80-ac)	1500	3774
Sam Dorfman-J. D. Reynolds, J. T. Miller-Humble 6 (58-ac)	750	3751
Eastern Texas Pet. Co., D. F. Smith 9-A (611-ac)	7000	3578
Gen'l Crude Oil Co., F. T. Rembert 13 (89.27-ac)	7500	3516
O. L. Hickman & S. K. Baird, L. Graves-Rio 9 (106½-ac)	5500	3580
Humble, W. W. Holland 26 (201.63-ac)	10,000	3680
G. W. Johnson 15 (98.9-ac)	5500	3715
H. M. Reeves 5 (28.2-ac)	8400	3659
Thos. D. Humphrey et al, E. F. Johnson 4 (20-ac)	2000	3654
Magnolia, Mattie Dyer 6 (39.09-ac)	11,500	3558
L. J. Everett 26 (166.96-a)	10,000	3689
Caddie Fisher 7 (147-ac)	7000	3460
J. C. McKinley 7 (41.36-ac)	7600	3667
Margay Oil Corp., R. Corbin 8 (55-ac)	7200	3560
Mudge Oil Co., J. W. Free 15-A (105-ac)	11,000	3725
New Process Prod. Co., Geo. Anderson 7 (8.61-ac)	9600	3525
Oils, Inc., A. J. Sanders 16 (73.63-ac)	7000	3632
Geo. L. Pace & G. P. Mitcham, A. D. Adkins 5 (51.7-ac)	6000	3803
Satellite Oil Co., L. M. Colburn 8 (36.35-ac)	9200	3596
Ted S. Schroeder et al, J. C. Bumpas 7 (26.04-ac)	9500	3590
Southland Drl. Co.-United E&W Oil Co., O'Byrne 13 (304-ac)	6500	3670
Stanolind O&G Co., Cox-Hamon 8 (72.68-ac)	9000	3492
Stanolind-Simms-Conoco, Flewellen 12-A (200-ac)	7500	3646
Sun Oil Co., T. C. Ramey 8 (86.54-ac)	500	3783
A. H. Tarver et al, J. W. Free 4 (28-ac)	8300	3662
Texas Co., T. W. Lee 20 (210-ac)	8000	3583
Yount-Lee, Stuckey-Thrasher 16 (80-ac)	8200	3583
ANDERSON COUNTY (Cayuga Field)—		
Tide Water & Texas Seaboard, M. H. Sullenberger 3 (363.6-ac)	¶25	4036
G. W. Ware 8 (571.65-ac)	3600	4099
NAVARRO COUNTY—		
Wm. C. McGlothlin et al, Dobbin 1	*	2135
SMITH COUNTY—		
Sun Oil Co. et al, Longley-Reeves 1	*	4002

*Failures; †Junked; ¶Mil. cu. ft. gas.

East Texas Woodbine Play to Receive More Operations

Tyler, Texas. — Three geophysical prospects held by E. DeGolyer, who operates through the Atlatl Royalty Corporation, Houston, and associates in Wood County, northeast Texas, are included among the new group of wildcats scheduled for an early start. Camp, Henderson and Anderson counties each have new test authorized.

Reports indicate that DeGolyer et al may drill the three Wood County wildcats simultaneously. The blocks are in the west part of the county. The most popular location with royalty buyers is the test to be drilled on the R. M. Stone 40-acre lease, J. Simpkins Survey, about 1¼ miles south by west of Alba. Location has also been made on the Dr. J. B. Goldsmtih 640-acre tract, W. W. Lanier Survey, about 2½ miles northwest of Quitman, or about eight miles east by north of Alba. The third wildcat project is slated for the H. Morgan 200-acre lease, Jessie Walker Survey, about 4¾ miles east of Yantis.

Southwestern Camp County will be explored for production in the Woodbine through a test to be drilled by E. J. Moran, G. E. and Ray Hubbard, Dallas operators. They have a block of 8000 acres, and have made location for W. M. Mitcham 1, center of the north 50 acres of 100-acre tract, L. Rose Survey. It is about 1½ miles north of Newsome. Geology was worked by David J. Crawford, Dallas.

The Larue salt dome area, Henderson County, is to receive another test through Tide Water Oil Company and Texas Seaboard Oil Company having turned a portion of their original block of 6000 acres to Toddie L. Wynne, Dallas, and associates for the immediate drilling of a test. Rig has been erected 999 feet from the east and 1201 feet from the north lines of the G. W. Forester 114-acre lease, David Cherry Survey.

Drilling site has been cleared by Hunt Production Company and Sun Oil Company for the drilling of a previously announced location in the Slocum area, Anderson County. Location is on the Mrs. Alice Scott 300-acre tract, Jas. Crawford Survey, situated 1000 feet southeast of a failure drilled by Byrd-Frost, Inc., and Stanolind Oil & Gas Company, and directly between a later test drilled by the latter. The third try for production in the area is predicated on the theory that a narrow faulted structure capable of producing lies between the first two wildcats.

Plugging orders have been issued for Sun Oil Company et al's Longley-Reeves 1, J. Lindley Survey, about four miles northeast of Chapel Hill, Smith County, after logging salt water in Woodbine at 3977-4002 feet. Top of Red Beds was logged at 4001 feet, with an elevation of 399 feet.

Attempts to broaden the productive limits of the oil area on the discovery block of the Cayuga field, Anderson County, failed to materialize last week when Tide Water Oil Company and Texas Seaboard Oil Company prepared to make gassers of two tests that missed the oil sand in drilling to the water level. Their J. A. Campbell 2, located in the southeast corner of 151.3-acre portion of 680.24-acre tract, James Wilson Survey, and about 7000 feet southeast of nearest oil production, plugged back from salt water in sand at 4068 feet, or 3815 feet sub sea, to 3955 feet to complete for gas. The partnership's M. H. Sullenberger 3, located about 600 feet north by west of a completed oil producer in the bed of the Trinity River, recorded no oil sand in drilling to 4036 feet, or 3777 feet sub sea, and has completed for a gasser after cementing 5 3/16-inch pipe at 3890 feet. The same companies' G. W. Ware 8, situated on the northwest border of their oil producing acreage, gauged 140 barrels of oil in 24 hours.

Panhandle Producer Pays Out With Proration Test Flow

Pampa, Texas. — An average crude yield of 3978 barrels of high gravity oil daily for five days was maintained by Phillips Petroleum Company's A. K. Lela-Williams 7, located in Western Wheeler County, in establishing its official potential rating. Producing from three separate zones in the granite wash formation between 2250 and 2540 feet, this well yielded 19,890 barrels within the five-day open flow period permitted by the Texas Railroad Commission in fixing potentials, and more than compensated the owner for the cost of drilling and equipping the well. It is due to remain shut in for about 70 days in order to equalize excess production, as its allowable is about 282 barrels daily.

Western Wheeler County is the only section in the Panhandle that yields wells of sufficient size to amortize their cost while determining potential rating for proration. The area is likewise the most economical to operate in by reason of drilling the wells with rotary and completing in the 2500-foot horizon with seven-inch casing immediately above the oil horizon. Champlin Refining Company added a runner-up for the above big well in completing G. W. Williams 8 flowing 2264 barrels of oil and 10,000,000 feet gas during first 24 hours from granite wash at 2320-2547 feet.

Remo Royalty Company's Hunter 1-B, NWc W½ NW Section 47, Block 13, H&GN Ry Survey, supposedly a proven location for the Osborne-Woodley pool in southeastern Wheeler County, encountered salt water at 2267-2270 feet, or 11 feet above sea level, and will be plugged. Structural relief in this area is meager, as supported by the fact that this failure is only about 20 feet lower structurally in logging top of lime at 1550 feet than a nearby producer recently completed.

Magnolia Petroleum Company scored its second large oil producer on its C. R. Jones 326-acre lease, situated in the northeast portion of the Dumas-Sunray field, Moore County, with a flow of 1288 barrels of oil in 17 hours from dolomite lime at 3407-3408 feet. Gas yield was estimated at 6,000,000 feet daily. It is on the north line of Section 170, Block 3-T, T&NO Ry. Survey, and one location west of an old producer. The allowable of the two wells is 217 barrels daily each. Jones 2 was not given a five-day open flow gauge, as salt water has appeared. Barnsdall Oil Company and Sunray Oil Company's Francis Jones 2, NWc E½ SW Section 164, located near the above well, failed to produce oil in drilling to 3500 feet, but is making 25,000,000 cubic feet of gas from the upper section of the lime.

An outpost test for the west portion of the Dumas-Sunray district, Moore County, will be started within 45 days by Robt. Watchorn, Oklahoma City, on a block of 880 acres given by Gulf Production Company, with the latter retaining mineral rights below 3700 feet. Watchorn has made location for J. F. Ward 1, NWc SW Section 362, Block 44, H&GN Ry. Survey, and in event of a commercial oil well will probably drill a second test on the J. W. Allen land in NW Section 363.

An aggregate of 8650 barrels of oil and 41,000,000 feet of gas production was added the past week by the Panhandle through completion of six oil wells, one gasser and two failures.

North Texas Potential Output 88,404 Barrels

Wichita Falls, Texas.—Rated potential production of the 15,833 pumping and flowing wells in North Texas was placed at 88,404 barrels on April 1, according to a revised survey conducted by the local staff of the Texas Railroad Commission. These wells are prorated to 59,459 barrels daily, or an average of 3.76 barrels per well daily. Figures are exclusive of the Johnson ranch field, Cottle County, where The Texas Company has four prolific wells in the 3600-foot Canyon lime horizon that are given a separate allowable of 900 barrels daily.

Prior to last December this district has operated more producing wells than any other district dating back nearly a score of years. Leadership was taken by the East Texas field.

Revised proration schedule prepared by the Commission's staff reveals that North Texas has 14,410 wells in the 10-barrel marginal well class that are not capable of producing their maximum allowable, while there are 826 shallow wells that are rated above 10 barrels potential and are prorated to 20 per cent of the surplus potential. There are 518 wells in the 20-barrel marginal well class that produce less than their earned quota, and 79 that have a potential above 20 barrels.

50 New Wells Added In North Texas

Wichita Falls, Texas.—A high percentage of oil producers were included among the 50 completions recorded the past week in North Texas. The district added an aggregate of 4230 barrels of new production through the completion of 30 wells, and the remainder of the completions consisted of 19 dry holes and a junked test.

West Texas' Oldest Wildcat Abandoned

San Angelo, Texas.—Failures predominated among the 17 completions recorded for West Texas the past week. There were nine dry holes, and eight oil wells that offered a combined initial yield of 87,800 barrels daily. The bulk of this new production was derived from a new well in the prolific section of the Yates field.

Offsets to one-well pools in Pecos and McCulloch Counties; two wildcats in Jones County, and Dawson, Glasscock and Ward Counties each shared in the quota of dry holes. Completion of Cardinal Oil Company's White-Baker 5, an offset to the shallow oil producer on the White-Baker ranch, McCulloch County, is the fourth consecutive dry hole drilled by the former without any encouragement. The oldest wildcat project in West Texas was dropped from field reports when the Dawson County test of Ray Albaugh, Fred Turner and Harry Adams on the John Robinson tract, C NW Section 46, Block M, E.L.&Ry Survey, quit in line at 4860 feet after losing tools. Cavings piled upon the tools. It was originally started by Albaugh et al in December, 1930, and numerous shutdown periods occurred.

Texas Panhandle Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
GRAY COUNTY—		
Skelly Oil Co., H. Schafer 24-E	414	3315
Southern Pet. Exploration, Inc., C. S. Barrett 1	*	3327
MOORE COUNTY—		
Magnolia, C. R. Jones 2	¶6-1500	3408
Texoma Nat'l Gas Co., J. W. Moore 1-P	¶25	3550
WHEELER COUNTY—		
Bell O&G Co., Walker-Conoco 1-A	40	2440
Champlin Ref. Co., G. W. Williams 8	¶10-2265	2547
Christie-Hickman Drlg. Co., D'Spain 7	452	2522
Phillips Pet. Co., A. K. Lela-Williams 7	3979	2540
Remo Royalty Co., Hunter 1-B	*	2270

*Failures; †Junked; ¶Mil. cu. ft. gas.

West Texas Completions

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CRANE COUNTY—		
Gulf, W. N. Waddell 9	677	3518
DAWSON COUNTY—		
Ray Albaugh, Fred Turner & Harry Adams, J. Robinson 1	*	4860
ECTOR COUNTY—		
Gulf, W. E. Connell 6-B	370	3700
GLASSCOCK COUNTY—		
John I. Moore & Loffland Bros., McDowell 1, Tr. 2	*	2546
HOWARD COUNTY—		
Bond Oil Corp., L. C. Denman 6	325	2845
IRION COUNTY—		
Lowe, Delaney & J. F. Carter, J. M. Nutt 3	50	1468
JONES COUNTY—		
T. K. Simmons et al, T. M. Harrell 1, sec 7	*	2235
United Prod. Co., T. P. Wood 1	*	2115
McCULLOCH COUNTY—		
Brock & Seward, McCall 1	*	611
Cardinal Oil Co., White-Baker 5	*	724
PECOS COUNTY—		
Cardinal Oil Co., White-Baker 1	*	2081
Tippett-Kirby 30-E	23	625
International Pet. Corp., White-Baker 1	*	1885
Marathon Oil Co., I. G. Yates 7-G	84,720	1254
UPTON COUNTY—		
Gulf, J. T. McElroy 111	1200	2850
WARD COUNTY—		
Fred Postelle & S. Caprito, T. H. Purcell 1	*	2775
WINKLER COUNTY (Sayre Field)—		
Sayre Oil Co., J. F. Howe 2	435	2965

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ARCHER COUNTY—		
L. T. Burns et al, R. E. Churchwell 3, blk 145	30	1161
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E. E. Hildebrand 1, blk 143	25	1163
Continental, Falls County 14-B	62	1130
Falls County 11-D	85	1060
F. P. Cullum et al, Falls-Ellis 32, blk 8	55	1142
Cullum & Alexander, Falls 29, blk 4	50	1214
W. B. Hamilton Pet. Co., Cartwright 19	135	1162
Cartwright 20	130	1166
W. Coffield 27	*	1247
Mrs. Mattie B. Madden et al, W. T. Richardson 1, sec 2424	18	1456
W. T. Richardson 2, sec 2424	30	1458
Perkins-Cullum Oil Co., Falls 155, blk 11	725	1175
Falls 156, blk 14	250	1121
Falls 158, blk 11	700	1168
Pet. Producers Co., Harmonson 15	100	974
Ray & Staniforth, J. J. Perkins 3, sec 10	125	1606
G. Rogers et al, F. Brezina 1, sec 2410	45	1436
White & Duncan, B. C. Andrews 2	*	920
D. L. Wolf et al, T. J. Moss 1, sec 1	*	1004
COOKE COUNTY—		
Pet. Producers Co., Andress 6	50	1410
MONTAGUE COUNTY—		
O. V. Beck et al, C. L. Davenport 16	345	1674
Benton & Holmes, W. A. Reed 1	300	1749
THROCKMORTON COUNTY—		
A. B. Swain et al, I. L. Still 1, sec 936	*	435
WICHITA COUNTY—		
Bonner Oil Co., Watkins 4, blk 46	*	853
Bridwell Oil Co., 1st. Nat'l Bank 6, sec 28	*	1775
R. R. Clark et al, Bickley 39	25	1810
Geo. W. Cooper et al, Waggoner Bros. 29, sec 8	*	1894
Humble, Wichita-Taylor 29, blk 81	*	934
King Royalty Co. et al, Waggoner Est. 4-J, sec 2	225	1563
John O'Neal et al, Waggoner Est. 2-AA, sec 13	*	1670
Pet. Producers Co., 1st, Nat'l Bank 71, sec 29,	¶	1753
W. T. Waggoner Estate, fee 2	200	1973
YOUNG COUNTY —		
O. T. Anderson et al, Belknap 2, sec 23	*	428
Belknap 3, sec 23	*	730
Brazelton Bros., Belknap-R. B. Ward 6, sec 2248	35	607
Cordova Union Oil Corp.-A. E. Lynch, M. K. Graham 1	*	4132
H. W. English et al, J. T. Lowe 2, sec 39	*	890
N. D. Goldsmith et al, J. L. Castleman 1, sec 72	*	1310
HLH Oil Co., W. L. Hawkins 1, sec 1916	*	560
L. A. Long et al, E. C. Stovall 1	20	2635
Martin & Son, Belknap 3, sec 2248	40	601
Pet. Producers Co., J. Graham 13, sec 2249	20	691
Pitzer & West-Simms Oil Co., J. H. Gaithright 1, sec 607	75	3870
Rathke Oil Co., W. H. Wadley 1	260	4416
E. H. Remington et al, E. Remington 1	*	490
E. R. Riggs et al, B. H. Larrimore 1-C, sec 2247	30	603
Wheeler & Brashear, Jeffery 5-A, sec 42	*	833
Wooten & Reed, G. W. Pool 1, sec 3404	*	594
J. A. Watson 4, sec 1910	*	630

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RAY DOAN now is factory representative in the Mid-Continent and Gulf Coast districts for Coffing Hoist Company of Danville, Illinois.

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This campaign follows closely behind the discovery of Conroe sand production by Smith and Storey's Frederick 1, at last reports flowing 350 barrels of 44.2 gravity, corrected, oil, through ¼-inch choke under 700 pounds tubing pressure and 1200 pounds casing pressure. With an elevation of 104 feet, the well topped the sand at 5201 feet and cored only eight feet of formation, stopping at 5209 feet. The string of 5 3/16-inch casing was set at 5194 feet.

The well is about ¾ miles east of the town of Dinero, and about 1½ miles north of the Lucas field, which to date has developed a number of high-pressure gas wells spraying a small quantity of high gravity oil.

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Another Live Oak County wildcat to encounter a showing was Henderson Coquat et al's Sartain 1, Section 43, Simmons subdivision, three miles southwest of Simmons City. It went into four feet of sand at 1356-60 feet, where the well blew out and ran wild for more than 24 hours. It has been controlled and is now drilling ahead.

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San Antonio, Texas.—Immediate development of the new Port Lavaca field, Calhoun County, is assured with The Texas Company leading the parade of new operations with 14 tentative locations. No less than six more locations have been made by holders of close in acreage. A pipe line outlet for the field also is in prospect.

Steinberger Petroleum Corporation's Shofner 1, A. Esparaza Survey, flowed at the rate of 525 barrels of 41.2 gravity oil per day through ¼-inch choke on tubing, showing tubing pressure of 1100 pounds and casing pressure of 1350 pounds. The temperature is 71 degrees.

The well is producing from sand section between 6216-39 feet. This is about 75 feet below the level of the Steen Drilling Company's Stanzel 1, discovery well of the field, which is a high pressure gasser, flowing a large quantity of distillate from a total depth of 6160 feet. The Shofner well encountered this sand, but drilled through it to test the next producing level. Only two wells have been drilled thus far in the area.

The Texas Company has a number of leases expiring, starting May 1, and will commence a heavy campaign to protect these leases. It is expected that the company will move in four or five rigs to carry on this work. Offsets to result for other companies will bring about a rather heavy campaign.

Depending on the results of several wells to be drilled, the Texas Pipe Line Company contemplates the extension of its Markam trunk line to this new pool, a distances of 35 miles. This line will be six inches in diameter if built.

Two-Mile Extension For Keeran Field

San Antonio, Texas.—A two-mile southwest extension to the Keeran field or a new Victoria County pool is considered in the making on the basis of the drill stem test in Moore and Ahern's Henderson and Pickering 1. Sand between 6005-18 feet developed 400 feet of pipe line oil in 12 minutes through ¼-inch choke top and bottom. Casing has been set and cemented.

The well is located 5280 feet from the northwest line and 330 feet from the northeast line of the W. Rupley Survey. It is one and one-half miles northeast of Placedo and 14 miles southeast of Victoria. It is two miles southwest of the Keeran field.

McFaddin field, lying mainly in Victoria County, but extending from Calhoun into Refugio, is to receive exploration of its possible deep horizons. Shallow gas pressures have hindered drilling this tremendous structure, covering many thousands of acres. The Texas Company, however, several months ago successfully completed an oil producer in a 6600-foot sand, bringing attention to the district as a possible large reserve. The Texas Company's McFaddin 9, located 1840 feet south of the above mentioned test, is drilling below 1000 feet. Shell petroleum Company has moved several miles to the east and has commenced A. M. McFaddin 1. It is 5000 feet east of the railroad and 600 feet from the north line of the lease in the J. Varin Survey. This well is 1500 feet south of T. B. Slick Estate's McFaddin 1, which showed gas and some distillate in several levels. On the same general structure, but just across the line in Refugio County, Humble Oil & Refining Company's M. M. Marberry 1, J. Dunn Survey, is drilling below 3060 feet.

Loma Novio Receiving Two-Mile Extension

San Antonio, Texas.—A two-mile north extension to the Loma Novio field, Duval County, was in the making late in the week with Al Buchanan and Blanco Oil Company's G. Ruiz Estate 1, southeast corner of 282-acre tract in Section 73, in process of completion. Plugs had been drilled and tubing run at last reports. On a drill stem test, the well showed 2000 feet of oil in 20 minutes from sand at 2711-16 feet.

Not such a favorable report comes from Harvey and Henderson's Chernoskey 1, wildcat in the northern portion of the county, near the Mullen line. The well started off flowing 10 barrels of fluid per hour, considerable of which was 20.5 gravity oil and the remainder drilling mud. While cleaning, the well bridged and swab was run to break the bridge, inducing the flow of salt water. It is not known whether or not the salt water is coming from the formation or from an upper formation as a result of cement giving away around the casing seat. This is likely in as much as only 31 sacks of cement were used, where up to 150 sacks is a customary amount. The well had Hockleyensis sand at 2220-34 feet and set five-inch casing at 2220 feet.

Gonzales County

San Antonio, Texas.—Southwestern Development Syndicate's W. S. Atkinson, Reims Survey, about two miles south of Thompsonville in Gonzales County, is making hole below 4700 feet. It topped the Midway at 3206 feet, Navarro at 3906 feet and Taylor marl at 4645 feet.

South Texas Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
BASTROP COUNTY—		
Joe Mills, Mrs. W. H. Cardwell (E. M. Pruitt) 1, 800 ft nwl, 1200 ft nel 400-ac tr, J. A. Navarro sur..	*	1820
BEE COUNTY—		
Eastland Oil Co., Fred Schroeder 1, 1979 ft wl of sur, 925 ft nl of 592-ac tr in Sarah Lewis sur	*	2809
Haines-McMillan Oil Corp., Stoltzfus 1, ne nw sec 14, J. M. Uranga Gr	*	lcn.
Edwin M. Jones, D. E. Robinson 15, sw sec 5, J. M. Uranga gr (W. Tuleta)	300	3945
Rual B. Swiger et al, C. A. Gardner 2, F. Lewis sur, (Caeser)...	500	3036
Tuleta Oil Co., Skinner-Harris 7, nw sec 10, J. M. Uranga gr (W. Tuleta)	300	3952
CALDWELL COUNTY—		
Kurz Oil Prod. Co., C. Kurz Ranch 1, 638 ft nl, 150 ft el of blk 1 (40-ac tr) out of 3846-ac tr, Klecamp sur	*	4104
CALHOUN COUNTY—		
Steinberger Pet. Corp., Shofner 1, A. Esparza sur, 330 ft sel and nel 100-ac tr (Pt. Lavaca)	650	6239
DUVAL COUNTY—		
Armoil Prod. Co., Heller 2, se sec 44 (Gov't Wells)	200	2314
Buffalo-Texas Drlg. Synd., Escobar 1, 1944 ft wl, 2777 ft nl Saenz Escobar 930-ac tr, San Francisco Gr, dd fr 3218 ft	*	4010
Intrepid Oil Co., Parr Ranch 1, 2590 ft sl, 150 ft el sec 26	*	4856
Magnolia, Hahl-Rogers 2, ne sec 61 (Gov't Wells)	200	2302
J. O. Wilson 13, sur 136 (Gov't Wells)	¶20	2295
Tex-La. Oil Co., Moody 5-B, ne se nw sec 60 (Gov't Wells)	*	2520
FALLS COUNTY—		
Davidson et al, Bozeman 1, 450 ft nl, 1900 ft swl of 65-ac tr, M. Pryor sur.	*	3260
HIDALGO COUNTY—		
Luckey & Blocker et al, F. B. Guerra 3, share 254, por 39 (Samfordyce)	550	2763
Ernest Powell, Geo. A. Moore, 330 ft sl and wl 40-ac tr, por 42 (Samfordyce)	*	3325
H. M. Reed, C. E. Smith 1, share 3-B, por 41	400	2798
JIM HOGG COUNTY—		
Sun Oil Co., Weil 1, 1320 ft sl and el sec 13, San Domingo de Abajo gr	*	4084
JIM WELLS COUNTY—		
O. W. Killam, W. D. Wade 4, 920 ft sel, 400 ft nel Blk D, E. A. Agua Dulce sur, (Sandia)	*	4850
LIVE OAK COUNTY—		
Smith & Storey, Frederick 1, 26,000 ft swl, 4100 ft nwl Jane Curry sur (N. Lucas)	500	5209
SAN PATRICIO COUNTY—		
Stanolind O&G Co., J. J. McMillan 1, 165 ft wl, 990 ft nl lot 12, Fulton Pasture sub P. Fitzsimmons sur	*	6009
STARR COUNTY—		
Goodwin & Zimmerman, N. Pena 1, 150 ft swl and sel of tr, share 80, por 81	*	1620
Lester & Duffield, Inc. & R. H. Vice et al, E. B. Carruth et al 1, 3690 ft sl, 3300 ft wl, share 1-B, por 91-92 ,sdtr and dr to 2908....	¶3-2	4016
WEBB COUNTY—		
American-Liberty Oil Co., A. M. Bruni 8-A, sec 6, Arispe gr, (Bruni townsite, Cole)	750	3425
Highland Oil Co., A. M. Bruni 3, sec 7, Arispe gr (Bruni townsite, Cole)	900	3404
O. W. Killam, A. M. Bruni 34, sec 6, Arispe gr (Bruni townsite, Cole)	350	3411
Frank McMillan, A. M. Bruni, 330 ft sl, 990 ft wl se sec 77.....	*	3628
Magnolia Pet. Co., Brennan Benavides 10, blk 488, Hale sub Arispe gr (Cole)	150	2798
Volpe Benavides 3, sw se sec 660 (W. Cole)	60	2335
WILLIAMSON COUNTY—		
G. L. Rowsey, Tr., Sladek 3-B, H. White sur (Byersville)	90	885
ZAPATA COUNTY—		
Alva J. Niles, M. Trevino 3-B, blk 14, sec 412 (Escobas)	14	1215
Joe Palmer, J. M. G. Martinez 1, 150 ft sel and swl of blk 27, sec 434	*	1502
Texas Co., Measles 65, Cerrito Blanco gr (Escobas)	*	1228

*Failures; †Junked; ¶Mil. cu. ft. gas.

Hidalgo County Deep Test To Be Reworked

San Antonio, Texas.—Union Sulphur Company's American Rio Grande Land and Irrigation Company 3, several miles north of Mercedes in Hidalgo County, is experiencing much trouble due to high pressures. This well shows possibilities of opening South Texas' deepest field, having a sand at 7477-93 feet.

The well has been flowing several days in an effort to clean itself. The pressures, however, have built up to 2250 pounds on the tubing and 2500 pounds on the casing. While cleaning through the tubing on ¼-inch choke, the test was making between 20 and 25 barrels of fluid per hour, 15 to 30 percent being high gravity oil and the remainder drilling fluid. A small amount of salt water is said to be showing up.

The well has been killed and the test will be re-worked. It is believed that the screen has been materially damaged by being cut with sand under the heavy pressure. It is likely that the screen will be removed and reset and method of completion on the second attempt altered to overcome some of the trouble encountered in the first operation.

This test is located on Lot 2082, Block 86 of the North Capisallo District, Llano Grande Grant. It is in an area of 10-acre tracts subdivided for farm development purposes during the early days of the Rio Grande Valley.

Oil Well Found in Barbacoas Extension

San Antonio, Texas.—Two-mile south extension and establishment of oil production in a heretofore gas producing horizon, was effected in the Barbacoas field, Starr County, last week through the showing of Armstrong, Emanuels and Adams' Starr County Cattle Company 1. This well sometimes is referred to as Conway and Emanuels.

A two-hour gauge from a sand at 2718-25 feet (corrected depth) showed 18 barrels per hour through ¼-inch tubing choke. The well then sanded up and an effort is being made to clean it. Elevation is 234 feet.

The test is in the southeast corner of Block 57, J. L. Subdivision, Porcion 89, and is two miles south of any production.

One gas well has been completed in this 2700-foot sand, and several oil wells have been developed in a 2550-foot horizon.

In the northern portion of the field, Merren, Johnson and Bond's Starr County Cattle Company 4, northeast corner of south half of Block 24, is perforating at 2765-68 feet. It drilled to 4213 feet,

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San Antonio, Texas.—Immediate development of the new Port Lavaca field, Calhoun County, is assured with The Texas Company leading the parade of new operations with 14 tentative locations. No less than six more locations have been made by holders of close in acreage. A pipe line outlet for the field also is in prospect.

Steinberger Petroleum Corporation's Shofner 1, A. Esparaza Survey, flowed at the rate of 525 barrels of 41.2 gravity oil per day through ¼-inch choke on tubing, showing tubing pressure of 1100 pounds and casing pressure of 1350 pounds. The temperature is 71 degrees.

The well is producing from sand section between 6216-39 feet. This is about 75 feet below the level of the Steen Drilling Company's Stanzel 1, discovery well of the field, which is a high pressure gasser, flowing a large quantity of distillate from a total depth of 6160 feet. The Shofner well encountered this sand, but drilled through it to test the next producing level. Only two wells have been drilled thus far in the area.

The Texas Company has a number of leases expiring, starting May 1, and will commence a heavy campaign to protect these leases. It is expected that the company will move in four or five rigs to carry on this work. Offsets to result for other companies will bring about a rather heavy campaign.

Depending on the results of several wells to be drilled, the Texas Pipe Line Company contemplates the extension of its Markam trunk line to this new pool, a distances of 35 miles. This line will be six inches in diameter if built.

Two-Mile Extension For Keeran Field

San Antonio, Texas.—A two-mile southwest extension to the Keeran field or a new Victoria County pool is considered in the making on the basis of the drill stem test in Moore and Ahern's Henderson and Pickering 1. Sand between 6005-18 feet developed 400 feet of pipe line oil in 12 minutes through ¼-inch choke top and bottom. Casing has been set and cemented.

The well is located 5280 feet from the northwest line and 330 feet from the northeast line of the W. Rupley Survey. It is one and one-half miles northeast of Placedo and 14 miles southeast of Victoria. It is two miles southwest of the Keeran field.

McFaddin field, lying mainly in Victoria County, but extending from Calhoun into Refugio, is to receive exploration of its possible deep horizons. Shallow gas pressures have hindered drilling this tremendous structure, covering many thousands of acres. The Texas Company, however, several months ago successfully completed an oil producer in a 6600-foot sand, bringing attention to the district as a possible large reserve. The Texas Company's McFaddin 9, located 1840 feet south of the above mentioned test, is drilling below 1000 feet. Shell petroleum Company has moved several miles to the east and has commenced A. M. McFaddin 1. It is 5000 feet east of the railroad and 600 feet from the north line of the lease in the J. Varin Survey. This well is 1500 feet south of T. B. Slick Estate's McFaddin 1, which showed gas and some distillate in several levels. On the same general structure, but just across the line in Refugio County, Humble Oil & Refining Company's M. M. Marberry 1, J. Dunn Survey, is drilling below 3060 feet.

Loma Novio Receiving Two-Mile Extension

San Antonio, Texas.—A two-mile north extension to the Loma Novio field, Duval County, was in the making late in the week with Al Buchanan and Blanco Oil Company's G. Ruiz Estate 1, southeast corner of 282-acre tract in Section 73, in process of completion. Plugs had been drilled and tubing run at last reports. On a drill stem test, the well showed 2000 feet of oil in 20 minutes from sand at 2711-16 feet.

Not such a favorable report comes from Harvey and Henderson's Chernoskey 1, wildcat in the northern portion of the county, near the Mullen line. The well started off flowing 10 barrels of fluid per hour, considerable of which was 20.5 gravity oil and the remainder drilling mud. While cleaning, the well bridged and swab was run to break the bridge, inducing the flow of salt water. It is not known whether or not the salt water is coming from the formation or from an upper formation as a result of cement giving away around the casing seat. This is likely in as much as only 31 sacks of cement were used, where up to 150 sacks is a customary amount. The well had Hockleyensis sand at 2220-34 feet and set five-inch casing at 2220 feet.

Gonzales County

San Antonio, Texas.—Southwestern Development Syndicate's W. S. Atkinson, Reims Survey, about two miles south of Thompsonville in Gonzales County, is making hole below 4700 feet. It topped the Midway at 3206 feet, Navarro at 3906 feet and Taylor marl at 4645 feet.

South Texas Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
BASTROP COUNTY—		
Joe Mills, Mrs. W. H. Cardwell (E. M. Pruitt) 1, 800 ft nwl, 1200 ft nel 400-ac tr, J. A. Navarro sur..	*	1820
BEE COUNTY—		
Eastland Oil Co., Fred Schroeder 1, 1979 ft wl of sur, 925 ft nl of 592-ac tr in Sarah Lewis sur	*	2809
Haines-McMillan Oil Corp., Stoltzfus 1, ne nw sec 14, J. M. Uranga Gr	*	lcn.
Edwin M. Jones, D. E. Robinson 15, sw sec 5, J. M. Uranga gr (W. Tuleta)	300	3945
Rual B. Swiger et al, C. A. Gardner 2, F. Lewis sur, (Caeser)...	500	3036
Tuleta Oil Co., Skinner-Harris 7, nw sec 10, J. M. Uranga gr (W. Tuleta)	300	3952
CALDWELL COUNTY—		
Kurz Oil Prod. Co., C. Kurz Ranch 1, 638 ft nl, 150 ft el of blk 1 (40-ac tr) out of 3846-ac tr, Klecamp sur	*	4104
CALHOUN COUNTY—		
Steinberger Pet. Corp., Shofner 1, A. Esparza sur, 330 ft sel and nel 100-ac tr (Pt. Lavaca)	650	6239
DUVAL COUNTY—		
Armoil Prod. Co., Heller 2, se sec 44 (Gov't Wells)	200	2314
Buffalo-Texas Drlg. Synd., Escobar 1, 1944 ft wl, 2777 ft nl Saenz Escobar 930-ac tr, San Francisco Gr, dd fr 3218 ft	*	4010
Intrepid Oil Co., Parr Ranch 1, 2590 ft sl, 150 ft el sec 26	*	4856
Magnolia, Hahl-Rogers 2, ne sec 61 (Gov't Wells)	200	2302
J. O. Wilson 13, sur 136 (Gov't Wells)	¶20	2295
Tex-La. Oil Co., Moody 5-B, ne se nw sec 60 (Gov't Wells)	*	2520
FALLS COUNTY—		
Davidson et al, Bozeman 1, 450 ft nl, 1900 ft swl of 65-ac tr, M. Pryor sur.	*	3260
HIDALGO COUNTY—		
Luckey & Blocker et al, F. B. Guerra 3, share 254, por 39 (Samfordyce)	550	2763
Ernest Powell, Geo. A. Moore, 330 ft sl and wl 40-ac tr, por 42 (Samfordyce)	*	3325
H. M. Reed, C. E. Smith 1, share 3-B, por 41	400	2798
JIM HOGG COUNTY—		
Sun Oil Co., Weil 1, 1320 ft sl and el sec 13, San Domingo de Abajo gr	*	4084
JIM WELLS COUNTY—		
O. W. Killam, W. D. Wade 4, 920 ft sel, 400 ft nel Blk D, E. A. Agua Dulce sur, (Sandia)	*	4850
LIVE OAK COUNTY—		
Smith & Storey, Frederick 1, 26,000 ft swl, 4100 ft nwl Jane Curry sur (N. Lucas)	500	5209
SAN PATRICIO COUNTY—		
Stanolind O&G Co., J. J. McMillan 1, 165 ft wl, 990 ft nl lot 12, Fulton Pasture sub P. Fitzsimmons sur	*	6009
STARR COUNTY—		
Goodwin & Zimmerman, N. Pena 1, 150 ft swl and sel of tr, share 80, por 81	*	1620
Lester & Duffield, Inc. & R. H. Vice et al, E. B. Carruth et al 1, 3690 ft sl, 3300 ft wl, share 1-B, por 91-92 ,sdtr and dr to 2908....	¶3-2	4016
WEBB COUNTY—		
American-Liberty Oil Co., A. M. Bruni 8-A, sec 6, Arispe gr, (Bruni townsite, Cole)	750	3425
Highland Oil Co., A. M. Bruni 3, sec 7, Arispe gr (Bruni townsite, Cole)	900	3404
O. W. Killam, A. M. Bruni 34, sec 6, Arispe gr (Bruni townsite, Cole)	350	3411
Frank McMillan, A. M. Bruni, 330 ft sl, 990 ft wl se sec 77.....	*	3628
Magnolia Pet. Co., Brennan Benavides 10, blk 488, Hale sub Arispe gr (Cole)	150	2798
Volpe Benavides 3, sw se sec 660 (W. Cole)	60	2335
WILLIAMSON COUNTY—		
G. L. Rowsey, Tr., Sladek 3-B, H. White sur (Byersville)	90	885
ZAPATA COUNTY—		
Alva J. Niles, M. Trevino 3-B, blk 14, sec 412 (Escobas)	14	1215
Joe Palmer, J. M. G. Martinez 1, 150 ft sel and swl of blk 27, sec 434	*	1502
Texas Co., Measles 65, Cerrito Blanco gr (Escobas)	*	1228

*Failures; †Junked; ¶Mil. cu. ft. gas.

Hidalgo County Deep Test To Be Reworked

San Antonio, Texas.—Union Sulphur Company's American Rio Grande Land and Irrigation Company 3, several miles north of Mercedes in Hidalgo County, is experiencing much trouble due to high pressures. This well shows possibilities of opening South Texas' deepest field, having a sand at 7477-93 feet.

The well has been flowing several days in an effort to clean itself. The pressures, however, have built up to 2250 pounds on the tubing and 2500 pounds on the casing. While cleaning through the tubing on ¼-inch choke, the test was making between 20 and 25 barrels of fluid per hour, 15 to 30 percent being high gravity oil and the remainder drilling fluid. A small amount of salt water is said to be showing up.

The well has been killed and the test will be re-worked. It is believed that the screen has been materially damaged by being cut with sand under the heavy pressure. It is likely that the screen will be removed and reset and method of completion on the second attempt altered to overcome some of the trouble encountered in the first operation.

This test is located on Lot 2082, Block 86 of the North Capisallo District, Llano Grande Grant. It is in an area of 10-acre tracts subdivided for farm development purposes during the early days of the Rio Grande Valley.

Oil Well Found in Barbacoas Extension

San Antonio, Texas.—Two-mile south extension and establishment of oil production in a heretofore gas producing horizon, was effected in the Barbacoas field, Starr County, last week through the showing of Armstrong, Emanuels and Adams' Starr County Cattle Company 1. This well sometimes is referred to as Conway and Emanuels.

A two-hour gauge from a sand at 2718-25 feet (corrected depth) showed 18 barrels per hour through ¼-inch tubing choke. The well then sanded up and an effort is being made to clean it. Elevation is 234 feet.

The test is in the southeast corner of Block 57, J. L. Subdivision, Porcion 89, and is two miles south of any production.

One gas well has been completed in this 2700-foot sand, and several oil wells have been developed in a 2550-foot horizon.

In the northern portion of the field, Merren, Johnson and Bond's Starr County Cattle Company 4, northeast corner of south half of Block 24, is perforating at 2765-68 feet. It drilled to 4213 feet,

plugged back, sidetracked and re-drilled to 2841 feet.

Resumption of activity has been registered in the Rio Grande City shallow field, there being five rigs running in the general area. Clopton's Tijerina 1, two miles north of the field, is down 1820 feet; R. G. Hall's Doyno Chatfield, about a mile south of the field, is moving in rotary; Mitchell et al's Salinas 1, northwest of the field, is down 1810 feet; Hiriam Reed has spudded Block Bros. 1, northwest of the proven area. Sioux Oil Company's Goodrich 7, in the main field, is drilling at 1310 feet.

Sinton Wildcat Has Small Show

San Antonio, Texas.—Plymouth Oil Company's Welder 1-C, 10 miles northeast of Sinton, San Patricio County, showed 450 feet of 32 gravity pipe line oil and 25 pounds pressure on a 10-minute drill stem test from a sand at 5500-04 feet. Tester seat was set at 5490 feet. The test was made through ¼-inch bottom choke and ⅜-inch top choke. It is drilling ahead.

Several interesting showings have been encountered in this well, the last being at 5218-22 feet, where a drill stem test netted 1400 feet of salt water and some oil and gas.

The test is located 2000 feet from the north and east lines of Section 49, resubdivision of the Welder ranch. It is three miles southeast of the Welder gas field, opened several years ago. It is about seven miles northeast of the Sinton field, where several high pressure wells, spraying a little oil have been completed in a 5400-foot sand.

Angelita field, in the southern part of the county, is attracting no great attention. Humble Oil & Refining Company's Welder 1, Lot 4, Villareal Survey, 6000 feet northwest of the discovery, is drilling below 6700 feet and showing nothing. Nearly two miles northeast, A. E. Masterson's W. A. Wurzbach 1 is drilling at 4200 feet.

Bruni Townsite

San Antonio, Texas.—Several completions were added as a result of a routine drilling week in the Bruni townsite area of the Cole field, Webb County.

American Liberty Oil Company's A. M. Bruni 8-A, made 22 barrels an hour through ¼-inch choke from 3410-25 feet. Highland Oil Company's A. M. Bruni 3, is a 25-barrel an hour well through ¼-inch choke from 3404 feet. O. W. Killam's A. M. Bruni 34 made 12 barrels an hour on ¼-inch choke from 3382-3411 feet.

Samfordyce Extended To the Southeast

San Antonio, Texas.—An extension of 1000 feet to the southeast and a flock of new locations features activity in the Samfordyce field during the week. New locations included mostly outpost wells.

D. D. Oil Company and K. D. Harrison's Mrs. Lula George 1, Tract 13, Porcion 41, cored gas sand at 2730-45 feet, shale at 2745-48 feet and oil sand at 2748-56 feet, and casing has been set at 2753 feet. Elevation is 125 feet.

Couple new producers were reported. Luckey & Blocker et al's Guerra 3 is flowing 12 barrels per hour through ⅛-inch choke from 2753-63 feet. H. M. Reed's C. E. Smith 1 made five barrels per hour through ⅛-inch choke, casing perforated at 2761-63 feet.

About one mile southeast of the field, Ernest Powell's George A. Moore 1, south end of a 40-acre strip in Porcion 42, has been abandoned at 3325 feet. With an elevation of 136 feet, it cored solid sand from 2828-92 feet, showing oil, gas and salt water.

Expect Four Bee County Wildcats to Produce

San Antonio, Texas.—Four Bee County wildcats appeared to be opening three new fields and extending another during the week. Three were in the Pettus section of the Cockfield, while the other was higher up in the Jackson section.

A. Hartzendorf's Fee 1, about a mile north of the Pettus townsite and on strike with the Cosden pool, showed 90 feet of oil, 60 feet of water (not salty) and small amount of pressure in 30 minutes through ⅜-inch choke and casing has been set. With an elevation of 366 feet, it had the sand at 3633-48 feet. While it is expected to be the opener of a new field, it may be an extension of the Cosden area.

Humble Oil & Refining Company's Laura Thompson 2, Garrett Roache Survey, 13 miles southeast of Beeville, topped heavy gas pressure at 5354 feet and at 5405 feet, it attempted to blow out. While working with the well, drill stem stuck and now attempts are being made to loosen it.

Worth Oil Company has set casing on Rutledge 1-A, B. Q. Hadley Survey, about midway between the Pettus and Caesar fields. It has the Pettus sand at 3386-94 feet. Saturated cores indicated a producer.

Tother Oil Company's J. T. Hudman 1, 1500 feet south of southwest outpost of the Caeser field, with an elevation of 444 feet, cored Pettus sand at 3112-17 feet and set casing without making a drill stem test. It is at the same level sub sea as the well to the north, which made an initial flow of 100 barrels per hour.

Southwest of the recent extension to the West Tuleta field, Dirks Brothers' George A. Ray 1, is drilling below 2220 feet. It will attempt to add nearly one half mile to the producing area.

In the same portion of the West Tuleta field, several other tests are being started. Leslie McKay has taken a 40-acre farm out from the California Company on an offset to the recently completed Jamison and Byron extension well and will drill immediately. Stanolind Oil and Gas Company, also with offset acreage, has staked two locations.

San Antonio, Texas.—Shell Petroluem Corporation's McCrory 1, Section 15, of the Morris and Cummings Survey, made a drill stem test of a sand at 5213-30 feet, which developed 1600 feet of salt water in 10 minutes. The cores showed an odor of oil.

Texas Gulf Coast Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
BARBERS HILL—		
Humble, Kirby B-8	250	5040
Sun, Wilburn 15, (wo)	500	5583
BLUE RIDGE—		
San Jacinto Oil Co., Blakely 6	200	4038
CONROE—		
Strake Pet. Co., Hammond 6	400	5065
ESPERSON—		
Wilson Broach Oil Co., McLean-Crook 1	350	2625
HASTINGS—		
Stanolind, Steve Paul 1	480	6018
HIGH ISLAND—		
Yount Lee, F. C. Pabst et al 1	600	4960
KITTRELL—		
W. A. Keils, L. W. Huffman 1	15	2009
SOUTH LIBERTY—		
Sun, Mitchell 20 (wo)	80	920
LIVINGSTON—		
C. & C. Drlg. Co., E. A. Watt 1	192	4235
LOUISE—		
Pure, Stewart 4	264	5163
MANVEL—		
Bowles & Borsodi, Norvel 2	96	5682
Gulf, Ellis 1	*	5670
Texas, L. C. Dawson 1	290	6032
E. A. Stone, Davis 1	*	lcn.
Winsor Oil Co., C. C. Colby 2	288	5117
MYKAWA—		
West Prod. Co., G. F. Forbes 1	480	4595
PORT NECHES—		
Port Neches Oil Co., Orgain 1	*	7475
SPINDLE TOP—		
Yount Lee, Gladys Smith 98 (wo)	40	2929
TOMBALL—		
Humble, Quilter A-5	510	5560
B. E. Stallones A-1	550	5575
THOMPSON—		
Gulf, S. B. Gehr 1	210	5365
ANGELINA COUNTY—		
E. B. La Rue, W. D. Ivey, near Huntington, Scarbrough sur	*	1743
GRIMES COUNTY—		
Russ Pet. Co., Gibbs 1, ne of Singleton, H. Hays sur	*	3503
HARRIS COUNTY—		
Hamilton, Hill & Hill, C. R. Wharton 1, w of Fairbanks, W. C. R. R. sur, sec 5	*	7205
POLK COUNTY—		
Kirby Pet. Co., Kirby Lbr. Co. 1, se part of County, T. F. Pinckney sur	*	5320
Smith & Thompson et al, E. Haynes 1, e of Leggett, J. Whitmore sur	*	4045

*Failures; †Junked; ¶Mil. cu. ft. gas.

Thompson Field Well Is Completed

Houston.—Gulf Production Company's S. B. Gehr 7, 640 feet of H. N. Naylor's Gehr 7, S. Kennedy Survey, Thompson field, Ft. Bend County was completed during the past week at 5365 feet. The well made 210 barrels on a 24-hour gauge through a quarter-inch choke with a tubing pressure of 220 pounds.

In the most northerly southeast corner of Ft. Bend County, Gulf Production Company has made selection on 6000 acres, paying five dollars per acre. The leases are on Arcola Sugar Mills land. The area was taken on a geophysical option with a selection price and the Gulf Production Company has worked the area with torsion balance, penduleum, and sesimograph reflection and is reported to have found a prospect and will start a test on the leases 30 days after April 6, 1935. In the area of Richmond Gulf Production Company is reported to be working up another block.

Harris County

Houston.—Hamilton, Hill & Hill's C. R. Wharton 1, 2½ miles west of Fairbanks, W. C. R. R. Survey, Section 5, Harris County, has been abandoned at 7205 feet. The well was plugged back to 6887 feet, where casing was perforated with 80 shots and swabbed salt water and was again plugged back to 6850 feet and again received salt water. The test topped the Upper Saline Bayou at 6855 feet.

In the Genoa area of Harris County, West Production Company is reported to have leased the Events 23 acres for $75 per acre with $5 per acre annual rental.

Polk County Wildcat Abandoned

Houston.—Kirby Petroleum Company's Kirby Lumber Company 1, in the southeast part of Polk County, T. F. Pinckney Survey, was abandoned during the past week at 5320 feet after coring salt water sand from 5006 to 5040 feet. The well topped the Cockfield at 4965 feet.

Smith & Thompson et al's E. Haynes 1, 9¼ miles east of Leggett, Polk County, J. Whitmore Survey, was completed as a dry hole at 4045 feet. This wildcat encountered the Cockfield at 2905 feet.

Another producer was added to the Livingston field of Polk County, when C. & C. Drilling Company's E. A. Watt 1, A. Viesca Survey, was completed for eight barrels per hour from 4235 feet. The flow was through a quarter-inch choke with a tubing pressure of 1250 pounds; casing 1300 pounds.

Cleveland Field

Houston.—Gulf Production Company completed McDonald 1, 500 feet west of Black Gold Production Company's McDonald 1, C. Smith Survey, Liberty County, Cleveland field, for approximately 18 barrels per day from 5840 feet. The flow was through a quarter-inch choke with tubing pressure of 1800 pounds; casing 2200 pounds.

Austin County

Houston.—Arkansas Fuel Company's Otto Huedner 1, five miles east of New Ulm, R. Stolze Survey, Austin County, made a drill stem test which showed five fourbles of mud with a slight cut of gas from 2920 to 2930 feet. The test was made in four minutes. The test now is drilling below 3140 feet. A gas sand was reported from 3010 to 3015 feet and at 3030 feet a showing of oil and gas was noticed. The Hockleyensis was topped at 2788 feet. Elevation is 276 feet.

Near the town of Industry, an independent oil operator, who has drilled in the area before, is still taking leases. The leases center around the J. F. Pettus Survey. The operator has close to 3000 acres in the area.

Harris County

Houston.—W. U. Paul's House 2, 100 feet north of House 1, M. Magruda Survey, Harris County, made a drill stem test from 7680 to 7760 feet and showed 67 thribbles of salt water and two thribbles of mud in 30 minutes. The test was made through a quarter inch choke on top and bottom. The test has been plugged back to 7610 feet and casing will be perforated from 7550 to 7560 feet.

Grimes County

Houston.—Russ Petroleum Company's Gibbs 1, three miles northeast of Singleton, Henry Hays Survey, Grimes County, was abandoned during the past week at 3502 feet. Top of the Queen City was found at 2714 feet.

Houston.—Turnbull & Irwin has made location for Oliva W. & R. H. Allison 1, 2000 feet west and 2732 feet south of the northeast corner of the H. & T. B. Survey, Section 79 in the center of lot 36 in the Fresno area of Brazoria County.

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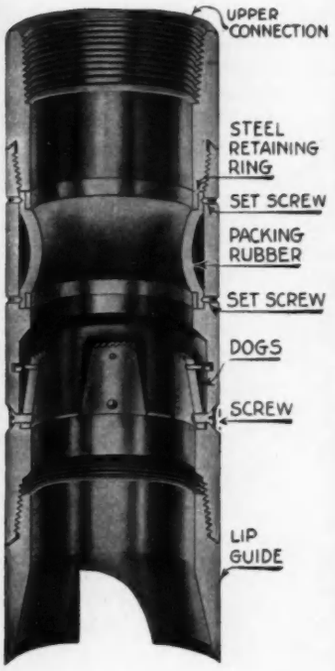

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Two North Flank Manvel Wells Completed

Houston.—Two new producers were added to the north flank of the Manvel field of Brazoria County. Bowles & Borsodi and The Texas Company having completed one well each. Bowles & Borsodi's well is producing from the Oligocene while The Texas Company's test is producing from the Miocene.

Bowles & Borsodi's Norvel 2, one location east of the discovery well for the Marginulina production of the north flank of the field, H. & T. C. Survey, Lot 57, Section 23, was completed for four barrels per hour from 5682 feet. The flow was through a quarter-inch choke with a tubing pressure of 300 pounds; casing 700 pounds.

The Texas Company's L. C. Dawson 1, Center of Block 49, Section 23, H. & T. C. Survey, Brazoria County, and two locations south of the discovery well for the Marginulina production, was completed for 145 barrels in 12 hours through a quarter-inch choke from 4032 feet. Tubing pressure was 690 pounds.

Another producer was added to the south and west flank of the Manvel field when Windson Oil Company completed its O. C. Colby 2, 660 feet southwest of Colby 1, T. Spraggins Survey, for 12 barrels per hour from 5117 feet. The flow was through a three eighths-inch choke with a tubing pressure of 200 pounds.

Gulf Production Company's T. L. Ellis 1, H. N. Little Survey, was abandoned at 5670 feet.

Sterling Oil & Refining Company's W. A. Gamble 1, on the northwest flank of the field, E. Little Survey, was drilling in shale at 5940 feet at the close of the week after failing to pick up any shows of oil. From 5694 to 5699 feet the operators tried to make a drill stem test but the seat failed to hold. The well had a showing of oil from 3968 to 3984 feet and tried three drill stem tests at this depth and all three attempts failed.

Hastings Field Extended Half Mile

Houston.—Stanolind Oil & Gas Company's Steve Paul 1, in the Hastings area of Brazoria County, was completed during the past week to extend the producing limits of the field approximately 2000 feet south.

The hole was bottomed at 6018 feet. The well came in for 20 barrels per hour through a quarter-inch choke with a tubing pressure of 870 pounds; casing 770 pounds. The oil was 32 gravity at 72 degrees. The well came in showing two percent wash water and a gas/oil ratio of 363 to 1.

The well is located 466 feet south and 476 feet west of the northeast corner of the Steve Paul 160-acre tract in Lot 25, A. C. H. & B. Survey, Abstract 462.

The same operator's J. W. Surface 1, the discovery well for the field, was recompleted and then killed during the past week. The well flowed 241 barrels per day from 6154 feet through a three sixteenths-inch choke. Tubing pressure was 600 pounds; casing 610 pounds. The well flowed 45 percent salt water through the casing and 10 percent through the tubing.

The same operator's Wooster 1, 2600 feet north of the discovery well is preparing to complete. It should be completed during the coming week. Bottom of the hole is 6082 feet with seven-inch casing set at 5878 feet.

The test is to be drilled to the southwest of Anchor in the Wm. Roberts Survey. The operator has 1100 acres in the area and is to drill a 8000-foot test. The test will be on the Sparks fee. This part of the Gulf Coast has attracted nearly every operator and it has been active for the past three months with all buying protection acreage. In the Bonney area of Brazoria County and to Angleton acreage is selling for $75 per acre.

Port Neches Attempt To Extend Is Failure

Houston.—Port Neches Oil Company's Orgain 1, 3000 feet southwest of production in the Port Neches field, Orange County, was abandoned at 7475 feet. The hole was plugged back to 6103 feet and a test was made which did not show anything. The well was in search of the Marginulina production on this side of the field and it was reported that the test was running over 500 feet higher than the other wells drilled in the area. The company will skid the derrick over and drill another hole to see if a good body of sand can be picked up.

Louise Field

Houston.—Another producer was added to the Louise field. Wharton County, when Pure Oil Company finaled Stewart 4, for 208 barrels in 19 hours from 5163 feet. The flow was through a quarter-inch choke with tubing pressure of 495 pounds. The oil was 25.7 corrected gravity.

The well is located 485 feet from the southwest line and 330 feet from the northwest line of east corner of 160 acre tract in M. Cummins Survey.

Gillis Area Extension Will Make 50 Barrels

Lake Charles, La.—Fohs Oil Company's Castle 2, quarter mile southwest of Castle 1, which extended the Gills field one mile to the south, Section 14-9s-8w, Calcasieu Parish, has been completed for 50 barrels of gasoline daily along with 2,800,000 cubic feet of gas from 7041 feet.

The flow was through a three sixteenths-inch choke on bottom and a twenty-five sixty fourths-inch on top. Tubing pressure was 2400 pounds; casing 2600 pounds. The operators will let the well blow for some time to try to convert it into a oil producer. If this doesn't succeed a new setting will be made.

Seven-inch casing was set at 6996 feet and the oil sand was topped at 7005 feet.

Fohs Oil Company has abandoned location for Castle 5 and McIver 1. A new location was made for Castle 5, being 600 feet south of Castle 1, and 928 feet from the north line and 330 feet from the west line of southwest of Section 13-9s-8w. The operators have a derrick up.

The Texas Company has made location for Nickerson fee 3, 2739 feet north and 3772 feet west of the southeast corner of Section 12-9s-8w. The same operators Fee 1, 220 feet west of Union Sulphur Company's State 2, which was a producer, Section 12-9s-8w, is now drilling deeper and is in an oil sand and the operators are making setting to bring the well in. The well originally was completed for five million cubic feet of gas daily from 6721 feet.

Union Sulphur Company has made location for State 10 in the Gillis field and is 2376 feet north and 2171 feet east of the southwest corner of Section 12-9s-8w. The same operators Barbe 3, 500 feet north of the discovery well is down to 6675 feet and should reach the producing sand the coming week. Buhler 1, 1000 feet southwest of the discovery well at 7782 feet after coring a gas sand from 7445 to 7458 feet. A salt water sand was found from 7261 to 7287 feet. O. H. Castle 1, 500 feet north of Fohs Oil Company's Castle 1, is drilling in shale at 7591 feet. Castle 2, 500 feet east of Union Sulphur Company's Castle 1, is down to 7216 feet. Union Sulphur Company's operations on the Castle lease has apparently missed the producing horizon for the south end of the field.

To the north of Sulphur in Calcasieu Parish, Milton Smith is reported tak-

ing a block and to date he has around 2000 acres. The consideration is from one dollar to two dollars per acre. Humble Oil & Refining Company and Stanolind Oil & Gas Company have worked this area with geophysical instruments the past two weeks.

During recent weeks Stanolind Oil & Gas Company is reported to have purchased acreage between the Welsh field and the town of Welsh. The company is buying lots on the edge of the town. The area has been worked with torsion balance and reflection.

To the south of Lake Charles, Union Sulphur Company is reported to be taking acreage and to date the operators have approximately 3500 acres. The company is paying from five to 10 dollars per acre. In the same area the Gulf Refining Company is purchasing acreage for six dollars per acre.

Cameron Parish

Lake Charles, La.—The Texas Company's Miami Fee 1, Cameron Meadows, Cameron Parish, was plugged back to 4004 feet and casing was perforated from 3977 to 3996 feet and the well came in for 482 barrels daily, 65 percent salt water and 160 barrels of net oil through a one-inch choke with a tubing pressure of 15 pounds and after the pressure declined the well stopped flowing.

The hole was drilled to 9331 feet being the deepest hole drilled in the Cameron Meadows field. Salt was topped at 9318 feet.

Churchill Prospect

Lake Charles, La.—Woodley Petroleum Company's Dr. Newman 1, Churchpoint, Section 24-7s-1e, Acadia Parish, was plugged and abandoned at the end of the week at 8066 feet without showing anything of commercial value. This is the second well to be drilled on the Churchpoint prospect and both have been abandoned.

Galveston County

Houston.—Humble Oil & Refining Company's E. Schaffer 1, 3500 feet west of the discovery well, W. K. Wilson Survey, Dickinson field, Galveston County, made a drill stem test from 8675 to 8695 feet and showed 10 thribbles of mud cut with oil and 43 thribbles of salt water. The test was made in 35 minutes through a quarter-inch choke on top and bottom. The well is now drilling below 9110 feet in shale. The same operator's Danielson 1, 2500 feet southeast of the discovery well, J. Sellers Survey, is drilling at 9250 feet.

Deep Roanoke Well Is to Be Reworked

Lake Charles, La.—Humble Oil & Refining Company's Devilbiss 3, one mile southwest of the discovery well, Roanoke field, Section 14-9s-4w, Jefferson Davis Parish, flowed 150 barrels of fluid daily, 50 percent and then increased to 300 barrels per day with only 27 percent water during the past week from sands 8695 to 8700 feet.

The well was drilled to 9571 feet and was plugged back to 9418 feet and seven-inch casing was set at 9310 feet and it came in making 250 barrels of fluid, 32 percent oil through a quarter-inch choke with a tubing pressure of 1100 pounds and casing pressure 1200 pounds. The gravity was 36 degrees. At this depth this well was one of the deepest producers in the world. At 9330 feet the well flowed 95 percent salt water and only five percent oil and then went dead. The hole was plugged back to 9318 feet and tested salt water and it was plugged back to 9216 feet and wash water was swabbed. After plugging back to 8930 feet the well again tested salt water and the hole was plugged back to 8740 feet and the casing was perforated from 8695 to 8700 feet and came in for the 300-barrel gauge with 27 percent salt water. Tubing pressure was 900 pounds, casing 400 pounds. The flow was through a five sixteenths-inch choke.

The same operator's M. Kratzer 1, Section 11-9s-4w, was being worked over at the close of the week. The old total depth was 8830 feet and the hole was plugged back to 7956 feet and casing was perforated from 7780 to 7796 feet and on a drill stem test in 12 minutes the well showed a 400-pound pressure through a quarter-inch choke on top and bottom and in 20 minutes a 900-pound pressure with a spray of oil. Two and half-inch tubing was hung at 7794 feet and it came in making 22 percent salt water with a tubing pressure of 1250 pounds; casing 1150 pounds through a fourteen sixty fourths-inch choke. The well was killed and plugged back to 7956 feet and casing was perforated from 7780 to 7796 feet and cemented through the perforations.

Same operator's Taylor 1, is being rigged up to be worked over. The corrected location on Humble Oil & Refining Company's Thomas 1, is 2240 feet south and 2472 feet west of the northeast corner of Section 11-9s-4w.

Shell Petroleum Corporation's Jaringan 1, which tried to blow out at 10,001 feet was plugged back to 7485 feet to test sands from 7465 to 7505 feet. The hole was bottomed at 10,001 feet and the sand was topped at 9999½ feet and the well tried to blow out for 18 hours and was killed with 1500 sacks of drilling mud. The drill stem was stuck 10 feet off bottom and the operators cut seven-inch casing at 7600 feet.

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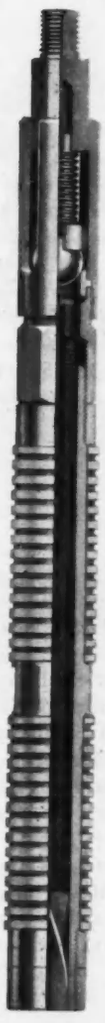

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Bosco Field Is Defined to West

Lake Charles, La.—The Bosco field of Acadia and St. Landry Parishes was defined to the west when Superior Oil Producing Company abandoned J. S. Arceneaux 3, at 8714 feet after testing salt water. The well is located 3500 feet west of the discovery well.

Superior Oil Producing Company's P. O. Hernandez 7, Bosco field Acadia Parish, was spudded in on April 7, 1935, and set 13⅜-inch casing at 1206 feet and on April 11, 1935, the operators were down to 4291 feet. The same operator's V. Prajean 1, was spudded in on April 6, 1935, and set thirteen and three eighths-inch casing at 1287 feet and on April 11, 1935, the well was down to 5556 feet. The operators are averaging over 1000 feet a day in drilling wells at Bosco.

Make Location

The company has made location for P. O. Hernandez 8, 1005 feet east and 219 feet north of the southwest corner of northwest quarter of Section 34-8s-3e. O. Mellencon 3, is located 400 feet south and 380 feet east of the northwest corner of the southwest quarter of Section 34-8s-3e. Mire 2, is located 1039 feet south and 916 feet west of the northeast corner of Section 33-8s-3e. Larcade 9, is located 2755 feet north and 1936 feet west of the southeast corner of Section 34-8s-3e.

South Louisiana Lease Work Active

Lake Charles, La.—C. B. Bunte has made location for Thislewaite Lumber Company 1, on his large block in St. Landry Parish. The well is located 7590 feet west and 1980 feet south of the northeast corner of Section 68-5s-4e. The operator has approximately 10,000 acres in the area of which several of the major oil companies have bought spreads. The well is located on the Washington prospect.

Shell Petroleum Corporation is slowing up in leasing in the Atchafalaya basin. Orders have been issued from Houston to discontinue leasing in the area. The past week the operators took 37,000 acres for geophysical work paying 30 cents per acre.

To the east in Livingston Parish, two independent operators from Shreveport, Louisiana, are working up a block centering around section 18-8s-6e. The acreage is for geophysical work. Shell Petroleum Corporation was assigned 12,000 acres which lies in the northeast part of the St. James, east Ascension and south Livingston Parishes. The leases are nine-month exploration leases.

In St. John the Baptist Parish, The Texas Company took 8500 acres at Edgar for geophysical work.

Lake Washington Well To Make Drill Stem Test

Lake Charles, La.—Humble Oil & Refining Company's Cockrell Moran 23, Lake Washington, Section 14-20s-26e, Plaquemines Parish, made a drill stem test during the past week from 3615 to 3670 feet and received 120 feet of mud in 11 minutes. The test was made through a three eighths-inch choke. The test is now coring ahead below 3708 feet. This well was the discovery well of a new sand in the field.

It flowed oil, 95 percent basic sediment and water, from 4355 feet and later flowed 500 barrels per day with only 31 percent water but finally dropped to three and half barrels per day and then the operators decided to plug it back to 1256 feet and whipstock at 2602 feet.

St. Mary Parish Wildcat to Test

Lake Charles, La.—Edwards Drilling Company's Chetemaches 1, near Charenton, Section 34-13s-9e, St. Mary Parish, was preparing to run an electrical logging device to 8140 feet.

The old total depth of the hole was 6501 feet where it was shut down for some time due to a storm that wrecked the derrick. The hole was plugged back to 2480 feet and then drilled to 6388 feet, where it again was plugged back to 4500 feet. From 7710 to 7717 feet the well had a slight smell of oil with no cut and from 7722 to 7732 feet sandy shale and from 7732 to 7735 feet a sulphur smell and salty taste. A sand was cored from 7735 to 7738 feet which had a good odor of oil with a salty taste and shale with odor of oil from 8120 to 8140 feet.

Second Four Island Well Being Completed

Lake Charles, La.—The second producer for the Four Island field of Terrebonne Parish is due for completion during the coming week. The Texas Company's Louisiana Land Four Island 8, Section 24-21s-16e, was waiting on cement to set at 5510 feet.

The bottom of the hole is 5569 feet and on a drill stem test from 5545 to 5562 feet the operators received 24 fourbles of oil and four fourbles of mud in 20 minutes. There has only been one commercial producer in the field and that was the discovery well and it is making 750 barrels per day.

Woodlawn Wildcat Test Is Abandoned

Lake Charles, La.—Strake Petroleum Corporation's Calcasieu National Bank 1, Section 12-9s-6w, three miles southwest of Woodlawn, Calcasieu Parish, was abandoned during the past week at 8148 feet.

The old total depth of the hole was 8092 feet in sand with a slight showing of oil. The hole was plugged back to 7550 feet and the operators ran an electrical logging device from 1305 to 5000 feet and at this depth the hole was sidetracked and drilled to 8095 feet. A drill stem test was taken from 8074 to 8095 feet which showed 310 feet of salt water in 10 minutes. The test was made through a quarter-inch choke on bottom and a three eighths-inch choke on top. The hole was carried on down to 8502 feet and was plugged back again to 7918 feet. The hole was redrilled to 8148 feet and a drill stem test was made. The test was made from 8144 to 8148 feet and showed 11 thribbles of salt water and two thribbles of mud with a trace of oil. The test was made in eight and one half minutes.

Tangipahoa Parish

Lake Charles, La.—R. A. Conklin's Lake Superior Piling Company, Section 19-5s-9e, Tangipahoa Parish, was drilling in sand at 3098 feet at the end of the week after taking a drill stem test from 3031 to 3063 feet. The test showed five stands of fresh water. The test was made in 10 minutes.

On a drill stem test from 2931 to 2981 feet the well showed eight and half stands of fresh water showing no oil or gas. The well cored lignite from 3050 to 3063 feet and at this depth a drill stem test was attempted but the seat failed to hold.

Louisiana Coast Has Quiet Week

Lake Charles, La.—There were eight completions reported along the Louisiana Gulf Coast during the past week. Of the total number completions there was only two producers which yielded 2130 barrels per day. The remaining six wells were failures.

There now are 589 producing wells in the Coast region of Louisiana scattered through the 29 fields. The 589 producing wells yield approximately 99,490 barrels per day. The Bosco field of Acadia and St. Landry Parishes is closely crowding the Iowa field of Jefferson Davis Parish for the lead in the daily output in Louisiana. The Bosco field is now producing 19,894 barrels per day while Iowa is producing 20,013 barrels daily.

South Louisiana Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
BOSCO—		
Superior Oil Prod. Co., J. S. Arceneaux 3	*	8714
EAST HACKBERRY—		
The Texas Co., State 12-B	380	5978
GILLIS—		
Fohs Oil Co., Castle 5	*	lcn.
M. McIver 1	*	lcn.
LEESVILLE—		
Lincoln Oil Co., Leesville 23	1750	3686
WHITE CASTLE—		
Shell, White Castle Shingle 1	*	6072
ACADIA PARISH—		
Woodley Pet. Co., Dr. Newman 1, Churchpoint, sec 24-7s-1e	*	8066
JEFFERSON DAVIS PARISH—		
Strake Pet. Corp., Calcasieu National Bank 1, sec 12-9s-6w	*	8148

*Failures; †Junked; ¶Million cu. ft. gas.

Louisiana Operators Start 25 New Tests

Shreveport, La.—Twenty-five drilling permits were issued last week by the minerals division, Louisiana Conservation Commission. Ten were for North Louisiana parishes and fifteen in Gulf Coastal Louisiana. The former were divided among the following parishes: Bossier, two; Caddo, two; Catahoula, one; DeSoto, one; Morehouse, one; Ouachita, one; Sabine, one; and Union, one. The south Louisiana permits were divided among the following parishes: Acadia, two; Calcasieu, four; Cameron, one; Iberia, four; Plaquemines, one; St. Bernard, one; St. Landry, two.

Converse Well Is a Nacatosh Sand Producer

Shreveport, La.—Logging six feet of true Nacatosh sand, which is unusual in the Converse shallow field, Sabine Parish, where usually marl appears at the horizon where the Nacatosh would normally appear, Hill Meyers' Henderson 1, SE NE 29-9n-13w, in the south edge of the field, last week was drilled into chalk with hole bottomed at 1630 feet and treated with acid.

When opened the well flowed at estimated rate of 100 barrels of oil daily, but no accurate gauge was secured. The test logged Nacatosh cap at 1509 feet where 6⅝-inch casing was cemented and after 1½ feet of cap logged the six feet of true sand. The test showed considerable oil before acid was used but refused to flow.

Completion of this well will require drilling of three offsets.

North Louisiana Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
CADDO PARISH (Blanchard)—		
Louanna O&G Co., Noah Moore 1, ne ne 8-18n-16w	¶½	936
M. Segal et al, P. A. Sharpe 5, sw nw 11-18n-16w	¶3	954
CADDO PARISH (Rodessa)—		
Arkansas-Louisiana Gas Co., Rodessa Oil & Land Co. 2 23-23n-16w	¶56	5869
DE SOTO PARISH—		
Hester et al, Alston 1-A, ne sw 11-11n-16w	†	2610
NATCHITOCHES PARISH (Marthaville)—		
Roy Raines et al, Raines 1, sw sw 28-9n-10w	†	3540
RAPIDES PARISH—		
S. J. Taylor, Bentley Lbr. Co. 1, 40-5n-1w	†	4465
UNION PARISH (Monroe)—		
Carbons Consolidated, C. C. Norman 1, nw nw 11-21n-3e	¶2	2200

*Failures; †Junked; ¶Million cu. ft. gas.

Two North Louisiana Gas Areas Extended

Shreveport, La.—Two gas fields in Caddo Parish were extended last week. The Rodessa field, which produces from the oolitic lime of the Glen Rose at 5500-5850 feet was extended a half-mile northeast by Arkansas-Louisiana Gas Company's Rodessa Oil & Land Company 2, Section 23-23n-16w, making 56 million feet of gas at 5859 feet. It is the eighteenth gasser for this field.

The shallow Blanchard field produc-

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ing from the Nacatosh was extended one mile southwest by Louanna Oil & Gas Company's Noah Moore 1, NE NE Section 8-18n-16w, making one-half million cubic feet of gas at 936 feet.

North Louisiana had seven completions of which four were gassers and three junked holes. Hester et al's Alston 1-A, NE SW Section 11-11n-16w, a wildcat in DeSoto Parish, had a showing of oil and salt water when formation tester was run at 2590-2600 feet. Ten feet more of hole was made and arrangements to plug back were being made as it was believed the oil was coming from 2490 feet when the hole caved in. Operators plan another test. A previous hole near the one just abandoned was also a junked hole.

Rainbow City Deep Test Has Oil Show

El Dorado, Ark.—H. L. Hunt, Inc., last week was arranging to set tubing and test E. F. Gregory 15, Section 10-17-14, a deep test in the Rainbow City field, Union County, after a good show of oil on the ditch, with bottom of the hole in lime at 6535 feet. The formation is identified as the Big Lime of Permian age. Base of red beds was logged at 5937 feet; elevation is 180.4 feet. Seven-inch casing was recently cemented at 5834 feet.

This test is the second deepest ever drilled in Arkansas, its depth record there only being surpassed by Lion Oil Refining Company's Hays A-9, Section 4-16-15, Union County, Smackover field, that went to pure rock salt of Permian age at 7255 feet.

El Dorado, Ark.—Three abandonments comprised the list of Arkansas completions last week. A west edge test in the Taylor sand producing horizon of the Rainbow City field, Union County, was a salt water hole. An east offset to the lone Nacatosh sand producer in the Camden area, Ouachita, was a salt water hole, giving offset failures in four directions to the producer. A wildcat in Arkansas County was the other abandonment.

Arkansas Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
ARKANSAS COUNTY—		
Grand Prairie Dev. Co., Fischer 1, nw ne nw 6-6s-4w	*	3935
OUACHITA COUNTY (Camden)—		
T. J. Gaughan et al, M. Bragg 3, sw ne se 25-13-18	*	1370
UNION COUNTY (Rainbow City)—		
T. L. James & Co., Inc., E. F. Gregory 2, nw nw sw 10-17-14	*	3402

*Failures; †Junked; ¶Million cu. ft. gas.

Arkansas Gets Two New Starts

El Dorado, Ark.—Arkansas broke even last week insofar as new operations were concerned, having two new locations and two abandoned locations.

One of the new tests, a wildcat, is in Hempstead County, F. W. Martin et al's A. J. Lafferty 2, SE SE NW 17-14-24, which is rigging. This is an offset to Lafferty 1 of the same operators in the same quarter. The original test logged base of anhydrite at 2700 feet and at 2720 feet a show of oil and gas was encountered. However, when formation tester was run it was dry. A Schlumberger test was also made. An oil show had also been reported at 2200 feet. It is reported that Sinclair-Prairie had an interest in the block when the first test was drilled.

Abandoned locations in Arkansas were: Adams Oil Company's B. Davis 1, NE SW NE 31-16-14, Union County, and S. J. Carnes' P. Highsmith 1, NW NE NW 25-13-18, Ouachita County.

Start Laying Jackson To Canton Gas Line

Jackson, Miss.—Municipal Service Company of Kansas City, Missouri, who was awarded contract for laying the six-inch welded gas line from the Jackson field to Canton, Mississippi, a distance of about 30 miles, is expected to begin laying the line April 15. The line is seven-inch OD and the distribution system also to be installed by this company at Canton will be six- and four-inch in size. Approximately 200 connections are to be made at Canton. The City of Canton owns two gas wells in the Jackson field. A PWA allotment of $190,000 has been made

Alabama Activity Expected to Increase

Mobile, Ala.—DeSoto Oil and Gas Company (Woodward et al), are repairing derrick and moving in additional machinery to deepen Gardner 1, NW NW 22-15s-16w, Lamar County, Alabama, which has been shut down at 4182 feet for some time. The test will assuredly be taken 500 feet more and perhaps to 6000 feet. P. J. McAlpine who has the drilling contract has just obtained 7000 feet of sand line, and a new 7000-foot drill line with new 5 3/16-inch bits and jars.

Danciger Oil and Refining Company which recently abandoned a test in Baldwin County, Alabama, on the Fort Morgan military reservation, at 2564 feet, is reported planning a deep test on its Baldwin County block

Ohio Oil Company which drilled a 5500-foot test several years ago on its block in Mobile County, is still paying rentals on it. United Gas Public Service Company's southwest Alabama holdings join this block on the north and west. The latter company still has a siesmograph crew working on its block near the Greene-George County line in southeast Mississippi on which it has drilled three tests, one to 5441 feet on School Board land, Section 16-1n-5w, Greene County, and another, Davis 1, Section 30-1n-5w, Greene County, to 7439 feet.

Jackson Field

Jackson, Miss.—Mississippi last week had one completion and one new location, both in the northern part of the Jackson gas field, Hinds County. Bob Weaver's Trussell & Oparka 1, NW SW NE 26-6n-1e, was completed as a 35 million foot gasser in the Midway chalk at 2472 feet, seven feet in chalk; elevation is 320 feet. The new location is Weaver and Alexander's Walthall 1, SE SE NW 25-6n-1e.

Mississippi Lease Work Is Increasing

Jackson, Miss.—Westbrook-Thompson et al of Fort Worth, Texas, have completed assembly of two blocks in North Mississippi, and plan immediate tests on each block. One block centers in Section 19-22n-5e, Grenada County, and contract for a 4500-foot test probably to be drilled in that section has been let to George L. Pace. The other block centers in Section 9-10s-1w, La Fayette County, and a 5700-foot test to go to the Paleozoics below the Cretaceous is planned.

A number of companies are taking scattered leases in Lamar County, south Mississippi. Latest filings show Arkansas Fuel Oil Company took 160 acres in township 4 north, range 1 west, and The Texas Company has recently taken over 500 acres in this area paying $2 per acre bonus. Other companies having acreage in this territory are Magnolia Petroleum Company, Sun Oil Company, Kirby Petroleum Company, and Grace Oil Company of Houston. E. B. Germany of Dallas, who was interested in a test drilled several months ago in that county has large holdings and recently secured mineral rights on 10,000 acres of land from Sowers Sawmill Company, this acreage

Mississippi Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
HINDS COUNTY (Jackson)—		
Bob Weaver, Trussell & Oparka 1, nw sw ne 26-6n-1e	¶35	2472

*Failures; †Junked; ¶Million cu. ft. gas.

lying in township 4 north, ranges 15 and 16 west. During the last week a core drilling crew entered Lamar County, believed to be employed by Mr. Germany, who several months ago drilled a series of core holes to about 1500 feet, using a Sun Oil Company crew.

Two Completed, Three Start at Cut Bank

Cut Bank, Mont.—Two oil wells were completed and three tests started in the Cut Bank field of northern Montana this week. R. C. Tarrant's Connolly 1, CNE SE Section 31-34n-5w, pumped 160 barrels in the first 24 hours. The production was logged at 2764-88 feet, and well drilled to 2796 feet.

Consolidated Gas Company's Tribal 4, Lot 8, Section 34-35n-6w, swabbed 100 barrels in the first 24 hours. The Cut Bank sand was encountered between 2930-58 feet and hole bottoms at 2962 feet.

The new locations include: Consolidated Gas Company's Tribal 6, CSW SW Section 10-34n-6w, rigging up; Steele Creek Production Company, Inc.'s (R. C. Tarrant et al's) Bertha Carmen 1, CSW NW Section 19-34n-5w, rig on location; and Montana Power Gas Company's Miller 1, CNW NW Section 28-33n-5w, moving in material.

Fist et al's test drilled on land owned by John Danen Mayor of Cut Bank, on Lot 10, Section 12-33n-6w, a townsite test, is shut down at 3160 feet in the Madison formation where it developed a hole full of water. It may be plugged and abandoned without backing up to test in lower Cut Bank where it had only a small show of oil.

Indian Oil Company's Winkler 2, SE SW Section 23-35n-6w, which was scheduled for completion this week, has casing trouble and is sidetracking the eight-inch at 2585 feet. There were 11 other tests active in the field at the close of the week.

Manderson, Wyo.—Yale Oil & Refining Company of Billings, Montana, and Yale, Oklahoma, has apparently brought in a shallow light oil field in northern Wyoming. The company's Blakesly 1, NE NE NW Section 28-49n-91w, a wildcat on the Bonanza Dome structure, near here, in Big Horn County, drilled into the Kimaball (Frontier) sand this week and has 1235 feet of oil standing in hole from bottom at 1400 feet. The 8¼-inch casing is set at 1295 feet. The oil rose within 165 feet of top of the hole in two hours.

Monument Play Starts With Providing of Pipe Line Outlet

Hobbs, New Mexico.—Pipe line outlet for the discovery well of the Monument area, Lea County's entry for listing among the major oil strikes in the southwest during 1935, is to be provided within several weeks through the construction of a nine-mile six-inch line by The Texas Pipe Line Company from its main boster station in the Eunice field.. Now that a crude market is to be available the owners of leases on the Monument structure will proceed with an aggressive development program, with one new location staked the past week about 3¼ miles northeast of the producer by The Texas Company. Shell Petroleum Corporation has made location for State 1-E, a northwest diagonal offset to the producer.

The Monument structure was proved for oil production last February when Amerada Petroleum Corporation's State 1-D, C NW NW 1-20s-36e, made 900 barrels of 32.5 gravity sulphur oil on gas lift at 3929 feet, or 339 feet sub sea. It was deepened in March to sulphur water at 3954 feet, then plugged back to 3945 feet for a shutoff. The well responded to treatment with 2000 gallons of acid solution with a steady has been shut in since March 16 for 17 hours through three-inch tubing, with about 2,000,000 feet gas daily. It has been shutin since March 16 for pipe line connection. Amerada Petroleum Corporation's State 1-F, a north offset, is drilling below 1220 feet, having topped the anhydrite at 975 feet. Superior Oil Company (California) and Shell Petroleum Corporation, owners of west and northwest offsets, respectively, to the producer are taking bids for the drilling of their first tests. The Texas Company is moving in materials to drill Saunders 1, C S½ E½ SW¼ 18-19s-37e, about 3¼ miles to the northeast, as this government permit expires in August. Work is to be started shortly by the Jeffers Oil Company (Anderson-Prichard) about 1¾ miles southeast of production on the Britt permit, C SE NW 7-20s-37e.

Completion of two big producers the past week by Phillips Petroleum Company and Pure Oil Company in the Cooper field increased their total wells to 15, and another test is ready to complete. Their Woolworth 13, C SW NW 26-24s-36e, averaged 144 barrels of oil per hour on six-hour open 2½-inch tubing gauge, with gas volume rated at 1,500,000 feet daily. The top of brown lime was logged at 2906 feet, or 414 feet above sea level and the well is bottomed in saturated lime at 3468 feet, or 148 feet sub sea. Woolworth 14, C NW SW 26-24s-36e, averaged 75½ barrels oil per hour on five-hour open tubing gauge from lime at 3464 feet, or 148 feet below sea level. Gas yield was 845,000 feet daily. Brown lime was topped at 2945 feet, or plus 371 feet. The partnership's Woolworth 15, C SE NE 27-24s-36e, topped brown lime at 328 feet above sea level, and flowed 50 barrels hourly on drill stem test at 3468 fet, or 145 feet below sea level. Seven-inch casing has been cemented at 3399 feet to complete.

The Texas Company's I. B. Ogg 6-A, C SW SE 35-24s-36e, situated on the southeast edge of the Cooper field, provided a surprise development in flowing 123 barrels of oil per hour, with a daily volume of 2,000,000 feet of gas, when formation tester was used on lime at 3350-3390 feet. It has a sub sea depth of 123 feet, affording a high structural position. Seven-inch pipe was cemented at 3350 to complete. In contrast to this preliminary showing, Empire Gas & Fuel Company's N. Everett 2, C SE SW 35-24s-36e, a west offset, showed 90 percent sulphur water at 3492 feet, or 225 feet sub sea, with 500 barrels of fluid, and when plugged back to 3450 feet cut the volume of water in half. It was plugged back to 3435 feet, then produced 100 barrels oil and 130 barrels water daily. Production was boosted to 400 barrels, 30 percent water, in 15 hours after treating the lime with 1000 gallons of acid. Empire's Everett 3, C NW SW 35-24s-36e, situated between several large oil wells, likewise encountered irregular lime conditions. It was drilled to 3507 feet, or 235 feet below sea level, and flowed 25 barrels per hour after treating the lime with 2000 gallons of acid solution.

North Jal Extended

Productive limits of the south portion of the North Jal field were extended one half mile to the east when J. M. Rush and Trinity Drilling Company's M. F. Sholes-Conoco 1, C NE NE 24-25s-36e, gauged 400 barrels of oil and 1,000,000 feet of gas in 24 hours through ⅜-inch choke from lime at 3257-3274 feet, or 153 feet below sea level. Repollo Oil Company's Gloyd 2, NWc SE¼ 12-25s-36e, an inside location for the field, produced 70 percent water in gauging 675 barrels of fluid in 21 hours after treating lime at 3305-3325 feet,

or 146 feet sub sea, with 2000 gallons of acid solution. Continental Oil Company and California Company have made locations for S. J. Wells 3-A and 4-A, situated to the northwest and north, respectively, of the latter well, but negotiations are underway for the sale of 10 40-acre units out of the Wells permit to a group of independents at Dallas.

Extension of the South Jal field within 1½ miles of the Texas border and 1¾ miles southeast of nearest oil production rests upon the results to be gained by The Texas Company et al's M. L. Parker 1, C NW NW 29-26s37e, in treating lime at 3193 feet, or 241 feet sub sea, with acid. A small amount of free oil was encountered in drilling the outpost to the estimated danger level for water.

Ohio Oil Company is starting a third test on its McDonald-State block to the southeast of the Eunice field, having scored big gassers in two previous attempts to develop oil production. McDonald-State 3, C NW SE 16-22s-36e, will be drilled about 2¾ miles southeast of nearest oil production in the Eunice field.

Two of the trio of new locations staked in the Hobbs field were on the extreme east and west borders. Capitan Oil Company's Turner 2, located 660 feet from south and 2310 feet from east lines 34-18s-38e, is in the Hobbs townsite and due south of the company's recent big completion after treating with 6000 gallons of acid solution. Noble Drilling Company's State 4-C, located 1315 feet from south and west lines of 24-18s-37e, was ordered drilled after State 3-C, a north offset, gauged 129 barrels of oil per hour through three-inch tubing after treating lime at 4103-4200 feet with 2000 gallons of acid. Double volume of acid used in second treatment boosted the flow to 150 barrels of oil in 30 minutes. This extreme west edge well has an elevation of 3677 feet. Gypsy Oil Company has moved in rig to drill Graham-State 4, C NW NE 24-18s-37e, to offset recent completion by Shell Petroleum Corporation's State 2-D, which produced 8473 barrels net oil daily, plus 17 per cent sulphur water, from lime at 4065-4260 feet, or 582 feet below sea level. The well was washed in with oil.

Hobbs, New Mexico.—Pipe line runs for the 10 fields and districts in New Mexico during March amounted to 1,612,419 barrels, or a daily average of 52,024 barrels, according to compilation prepared by C. G. Staley, umpire. The bulk of this production is centered upon Lea County, where major pipe line companies are the principal purchasers, while that produced in Eddy and San Juan Counties is marketed at local refineries.

Lovell, Wyo.—One new test got underway this week in the Byron-Garland district in Big Horn County, northern Wyoming. Peter Evanoff of Casper is moving in material for MacAllister 1, Lot 40, Section 2-55n-97w, an extension test to the south of the Garland field.

Ohio Oil company is rigging up rotary for its recent location, Sidon Canal 2, southwest corner Lot 40, Section 24-56n-97w, in the Byron field. Taylor Oil Company and Sidney H. Keoughan's Hoskins 1, SE SE Section 26-56n-97w, is cleaning up fishing job with hole bottomed at 5375 feet just above its objective, the Tensleep.

Big Medicine Wildcat Has Heavy Gas Show

Medicine Bow, Wyo.—A 36,000,000 foot flow of gas was developed on a drill stem test at 5151-5206 feet in the Sundance sand in the joint wildcat test of Ohio Oil Company and The California Company on the Big Medicine Bow structure, 18 miles southwest of here in Carbon County, south central Wyoming.

The well, Kyle 1, NE SE NE Section 26-21n-79w, is waiting on cement to set around the 7⅝-inch casing at 5151 feet and will be completed a gasser without deepening to explore for oil. There was no water showing with the gas.

Medicine Bow Dome is 10 miles due south of the Allen Lake gas field, in which the Ohio Oil Company proved the Sundance sand for heavy gas production a year ago. The new well is five miles west of line from Allen lake to Laramie, Wyoming.

The Big Medicine structure lies along a north-south trend in Townships 20 and 21 North, Range 79 West, and has approximately 15,000 acres within its lowest closing contour. Its steepest flanks are to the east and north where the beds dip from 20 to 75 degrees and to the south the beds dip from 7 to 8 degrees. The structure has 2700 feet of closure.

Southwestern Petroleum Company and Cliff Petroleum Company drilled a well in NW SW Section 25-21n-79w, several years ago, and encountered 925 barrels of light oil production in the Muddy at 4035-80 feet, but on deepening to the Lakota at 4968 feet a hole full of water was developed and operators were not able to make successful shut off and the well was plugged and abandoned.

Big Lance Creek Well Under Control

Lusk, Wyo.—Ohio Oil Company's Agnes Rohlf 1, first well to the third bench of the Sundance in the Lance Creek field, was mudded in late Friday afternoon after blowing connection Tuesday morning and flowing at the rate of 5000 barrels a day.

The well, located in NE SE Section 32-36n-65w, completed a week ago, at 3190 feet and gauged 756 barrels in 12 hours after it began flowing when swabbed in through the two-inch tubing. It was rated as a 1500-barrel daily well. Earlier in the week it showed for 135 barrels an hour through the drill stem.

Little of the 45 gravity crude was lost despite the blowout. The field crew quickly dug a ditch from the cellar of the well to a nearby coulee across which a damn was thrown. The crude is being pumped from the earthen reservoir to steel storage.

Where the well cut connections had not been determined as the 18-foot cellar of the well was rapidly flooded with oil. Derrick of the well had been skidded to Elizabeth Lamb 6, SE SE Section 32-36n-65w, a 40-acre location south, when Rohlf 1 blew out. The company is rigging a rotary for Lamb 6.

Rohlf 1 is producing from three benches in the Sundance. In the upper bench the well developed a heavier oil, in the second bench at 10,000,000-foot gas flow, and in the third bench high gravity crude. Hole bottoms in the

Mountain States Completions

NEW MEXICO

Company, Well and Location	Init. Prod. Bbls.	Depth
LEA COUNTY (Cooper Field)—		
Phillips Pet. Co.-Pure Oil Co., Woolworth 13, c sw nw 26-24s-36e	5000	3468
Woolworth 14, c nw sw 26-24s-36e	3000	3464
LEA COUNTY (Eunice Field)—		
Atlantic O.P. Co.-Simms Oil Co., State 1-C, c sw se 5-21s-36e	325	3894
LEA COUNTY (North Jal Field)—		
J. M. Rush-Trinity Drl. Co., M. F. Sholes-Conoco 1, c ne ne 24-25s-36e	1000	3274
Repollo Oil Co., Gloyd 2, nwc se 12-25s-36e	200	3325

MONTANA

PONDERA COUNTY (Pondera Field)—		
Conrad Refining Co., Gjullin 2, ne ne sw 11-27n-4w	20	1895
PHILLIPS COUNTY—		
British American Synd., Miller 1, sw ne nw 17-32n-33e	¶1	1060

WYOMING

BIG HORN COUNTY—		
Drumheller, Martin 1, se se 17-49n-91w	15	1380
WESTON COUNTY (Osage Field)—		
Osage Trust, No. 1-X, sw sw 8-46n-63w	*	700
No. 1, w½ sw sw 8-46n-63w	5	280

*Failures; †Junked; ¶Million cu. ft. gas.

red beds three feet below the bottom of the Sundance. The well is located on lease turned to Ohio Oil Company by Cow Gulch Oil Company on a 40-60 operating agreement. Argo Oil Company and Continental Oil Company hold nearby acreage.

Kevin Sunburst

Kevin, Mont.—W. M. Fulton is plugging Halter 1, NE NE SE Section 17-35n-2w, in the Kevin-Sunburst field, Toole County, which was dry at 1750 feet and failed to respond to acid treatment. Three new tests started in the field. The Texas Company's Swears 5, CSW Section 9-35n-2w, is moving in rig. A. E. Crumley's Shaw 5, SE SW Section 35-36n-2w, is rigging up, and E. O. Rieckhoff's Government 2, W½ SW NE Section 3-35n-3w, is spudding.

Santa Barbara County Well Makes Gas Flow

Los Angeles.—Successful completion of Shell Oil Company's Bishop 1, wildcat test located in Section 20-4n-28w, three miles east of the Elwood field, Santa Barbara County, was somewhat of a surprise.

This well was completed on April 4, for an initial production of 15,000,000 cubic feet of gas, flowing through one one-inch bean and one 80/64-inch bean, with 380 pounds tubing pressure and 220 pounds casing pressure.

Shell Oil Company originally carried Bishop 1 down to 6508 feet but no showings of any consequence were noted in the lower portion of the hole. A cement plug was placed at 4170 feet and 180 feet of 6⅝-inch liner, including 123 feet of perforations, is landed on the plug. The 6⅝-inch casing, previously cemented at 5136 feet, was cut and pulled from 4200 feet, and 11¾-inch casing is cemtented at 4051 feet.

Except for normal increase in winter fuel conseumption, there is very little demand for gas in this district, so Shell Oil Company probably will shut the well in until there is a market for the gas. General Petroleum Corporation has three gas wells on the More Ranch, a mile to the east of Bishop 1, capable of producing approximately 80,000,000 cubic feet of gas, which are either shut in completely most of the time or allowed to flow only a small proportion of their potential.

Dominguez

Los Angeles.—Union Oil Company added another good producer to its list at Dominguez when Hellman 23 was completed on April 3, for an initial production of 103 barrels in the first sixteen hour, 31.0 gravity, cutting 1.8 per-cent. Total depth is 5230 feet, with 8⅝-inch casing cemented at 4615 feet, and 613 feet of 6⅝-inch liner, including 40 feet of perforations, is landed at 5040 feet and cemented through perforations at 4997 feet.

Under its lease requirements, Union Oil Company is obligated to keep one string of tools busy on this lease. Accordingly, Hellman 34 was spudded on April 4, and is drilling at 210 feet.

Kern River to Have Activity Revival

Los Angeles.—The old Kern River field, north of Bakersfield, is scheduled for a little activity in the near future. In order to fulfill lease obligations, following completion of Kern River Oilfields, Ltd., No. 1 a short time ago, Chanslor-Canfield-Midway Oil Company has staked location for No. 43 and will begin drilling at once. Location for the new project is 200 feet north and 200 feet west from the southeast corner of Section 23-28s-27e.

Kern River Oilfields, Ltd., has staked location for a second well, to be drilled 649 feet south and 200 feet east from the northwest corner of Section 25-28s-27e.

Kern River was discovered by Elwood Oil Company in 1899 and has been fairly well drilled up for years. However, gravity of the oil produced is very low and there has been very little market for this grade of petroleum. Consequently operators have been forced to curtail their development work to a very marked degree during the last few years.

Tehama County Test Reports Oil Show

Los Angeles.—Reports of a streak of oil sand having been penetrated in Northern Counties Petroleum Company's Ewers-Mooney 1, Section 25-24-3, Corning district, Tehama County, diverted the attention, momentarily, of Southern California operators last week.

This well is now being drilled and cored below 3617 feet and formation for the past 500 feet has been mostly hard shale with gas in the fractures. However, at 3400 feet a streak of sand was encountered that gave nice oil showings.

This northern end of the Sacramento Valley has long been a source of speculation for oil operators and geologists but thus far discoveries have been limited to small gas wells. However, many of the major companies control blocks of acreage in the area under long-term leases and it is expected that numerous tests will be drilled wtihin the next few years.

Lost Hills Drilling Tests Have Water Trouble

Los Angeles.—Standard Oil Company is having the same trouble in United 1, Section 2-26s-20e, wildcat test 20 miles south of Kettleman Hills North Dome, in the Los Hills District, Kern County, that has been the Waterloo of other tests of the area.

Practically all wells drilled in this vicinity have had trouble with a high-head water zone encountered at depths varying from about 2000 feet to 3388 feet, at which latter depth it was found in United 1. Lincoln Drilling Company's Theta 1A, Section 12-26s-20e; General Petroleum Corporation's No. 1301, Section 13-26s-20e; and Associated Oil Company's Williamson 1, Section 2-26s-20e, all had more or less trouble with this zone, some of them failing to shut off the water after six or seven attempts.

In trying to find a solution to the water trouble, Standard Oil Company froze the drill pipe at 3346 feet and is trying to recover the fish before continuing the test.

Gould Hills

Los Angeles.—Notice of intention to abandon has been filed by The Texas Company on Jared How 1, Section 29-29-21, wildcat test of the Gould Hills District, 12 miles northwest of the Midway-Sunset field, Kern County.

It has been reported that this hole may be taken over and deepened by Western Petroleum Corporation. However, drilling operations have been suspended and all equipment is being removed. Total depth is 4513 feet, formation on bottom being shale. The only casing set was 16-inch at 198 feet. No showings were encountered in any of the formations penetrated.

Las Posas District

Los Angeles.—Las Posas Petroleum Company has completed a production test on Mahan 1, wildcat test of the Las Posas District, Ventura County, Section 22-3n-20w.

Total depth is 8120 feet, with 10¾-inch and 8¼-inch casing cemented at 7022 feet. For the test, 1080 feet of 5¾-inch liner, all perforated, was landed on bottom and 2½-inch tubing hung at 7600 feet.

Swabbing was started on April 1 and continued for four or five days. During this time the fluid level was fairly constant at 900 feet and fluid recovered was practically all water.

After completion of the test, operators tried to recover the tubing but could not, so it is now being fished for.

Kettleman Hills Well Is Great Disappointment

Los Angeles.—Associated Oil Company's Whepley 5, located on the northeasterly side of the central portion of Kettleman Hills North Dome field, in Section 35-21-17, has proved to be one of the most disappointing wells yet drilled in this highly prolific area.

Depth of Whepley 5 is 8387 feet, with 8⅝-inch casing cemented at 8173 feet, and 256 feet of three-inch liner, including 197 feet of perforations, is landed on bottom.

Maximum production obtained from the test now in progress was 52 barrels per day of gross oil and emulsion, and 801 barrels per day of water. However, the water is comparatively fresh, salt content being but 350 grains per gallon. Gas production is 1,800,000 cubic feet per day, all of which is being re-circulated, and gas lift is used to make the well flow. Pressures are 700 pounds on the tubing and 1400 pounds on the casing, these seemingly high pressures being caused by back pressures maintained with the compressor.

While this location is down on the flank of the famous Kettleman Hills North Dome structure, still it is well within the limits of proven production and engineers are at a loss to account for its poor showing. Preparations are now being made to kill the flow, pull liner, and work on the well further.

Rosecrans Producing Well Is Erratic

Los Angeles.—Attention of operators of the Los Angeles Basin area again was focused on the old Rosecrans field, when A. N. Macrate's Gray 1 was placed on production test a few days ago.

Total depth of this well is 6462 feet, with 5¾-inch casing cemented at 6215 feet. A string of 4½-inch liner, including 172 feet of perforations, was landed on bottom for the test and cemented through perforations at 6290 feet.

Using the swab as an agitator, an estimated 300 barrels per day rate of 38.0 gravity oil, cutting 10.0 percent, is obtained. After running the swab, fluid will head for about 30 minutes and then die, making it necessary to run the swab again. If allowed to stand a short time, pressures build up to 500 pounds on the tubing and 1250 pounds on the casing, and operators are at a loss to understand why the flow will not continue.

Preparations are being made to pull the liner, wash perforations, and clean out to bottom to see if the trouble is caused by the hole being bridged. If the hole is found to be in good shape, effort will be made to locate the source of the 10.0 percent water cut.

Dos Palos Gas Well Back on Production

Los Angeles. — Pure Oil Company has at last been able to place Chowchilla 1, deep gas well in the Dos Palos District, Section 7-10s-14e, Madara County, back on production.

The original completion of Chowchilla 1 was in November, 1934, when it flowed 18,000,000 cubic feet of dry gas through a formation tester. Depth at that time was 8244 feet, plugged back to 8030 feet. Following this test, the well was deepened to 8375 feet, but no additional sands were encountered so bottom was plugged back to 8125 feet, from which depth production is now being obtained.

Water shut-off is with nine-inch casing, cemented at 7765 feet, and 6⅝-inch liner is landed on the plug and cemented through perforations at 7940 feet. The well was recompleted on April 2 and is flowing 12,000,000 cubic feet of dry gas, with a very slight amount of water.

San Joaquin Valley East Side Gets Attention

Los Angeles.—Exploration work on the east side of the San Joaquin Valley continues to move steadily southward from the Mountain View and Edison fields, and leasing activity and operator interest, as always, is keeping pace with the change.

General Petroleum Corporation is preparing to spud Mattson 1, 10 miles south of Edison, in Section 1-32s-29e. The company controls a large block of leases surrounding this project and it is understood that fault accumulation, similar to the Mountain View field, is the objective.

Hall-Baker Company also has tentative plans to drill a deep test in this area, location for which will be near the southeast corner of Township 32 South, Range 29 East. This operator has been directing a very extensive core holing program in this district and two of the core holes have encountered showings sufficiently promising to justify converting them into well-equipped deep tests. One of the core holes, Tejon Ranch 2, has been taken over by Reserve Oil & Gas Company and is being deepened at 1772 feet. The second, Core Hole 4-4, has been deepened to 1270 feet, plugged back to 1127 feet, and is now testing the zone between 1106 feet and 1127 feet.

Elwood Wildcat Abandonment Halted

Los Angeles. — Abandonment proceedings on East Elwood Petroleum Company's Bishop-Evans 1, semi-wildcat located on the northeasterly edge of the Elwood field, Santa Barbara County, have been held up and the well will be tested further.

Bottom of the hole is at 3767 feet, with seven-inch casing cemented at 3677 feet. Several production tests were made but each time fluid was mostly water, although plugs were placed at various points in an attempt to shut out the water.

Operators cut the seven-inch casing, prior to abandoning, but when the casing was cut the well started to flow. This oil is from the shale, which was cemented back of the casing on previous tests.

Michigan Production Over Million Barrels Monthly

Mt. Pleasant, Mich.—The third consecutive million-barrel production month was registered in Michigan during March with a total for the month 1,118,314 barrels, the record all time high for one month.

January, first month in which Michigan reached a million barrels, production totaled 1,037,220 barrels and in February it went to 1,032,811 barrels. Production for the first three months last year, when the year total set a new record of 10,602,759 barrels, was as follows, January, 867,216, February, 796,923, and March, 849,380 barrels.

Porter township was the chief producing area in the three months totaling 873,581 barrels in March. Greendale, Vernon, Ogemaw and Montcalm all registered gains.

March development brought the total number of wells on production to 1002. The state proration committee set the state potential production at 56,067 barrels to be prorated on a basis of 75 barrels per well exemption and 25 percent of the overage.

Glacial Drift Hinders Michigan Development

Mt. Pleasant, Mich.—Dr. R. A. Smith, chief state geologist of Michigan, in an address April 5 before a group of business men, farmers and oil men, declared that the glacial drift in Michigan had held back development at least 50 years. "Were it not for the glacial drift deposits covering Michigan which range from a few feet to more than 1000 feet, Michigan would have been an oil state more than 50 years ago," he said.

Because of the drift formation, he

declared, it is virtually impossible to map possible trends from the surface. "Geology has had to wait for development."

Dr. Smith said he advised any company operating in Michigan to carry out extensive core-hole drilling to determine structures and trends before sinking deep tests. Using the Marshal or Red Rock as a marker, which ranges from 1200 to 1700 feet in Central Michigan, expenses can be cut and deep tests located wtih some knowledge of trends and structures, he pointed out.

"We have 20 years work ahead to prove what we already know," Dr. Smith said. Trends now located he said would require that much time to develop and prove or disprove.

Heavy Play Starts Around Montcalm Strike

Mt. Pleasant, Mich.—Five rigs were up, five other locations with material on the ground and about 10 other prospective locations made in the Montcalm-Gratiot area this week as a result of J. W. Leonard Jr.'s Durbin 1 wildcat strike on March 28. Operators were frank in calling lease and royalty activity the past 10 days the first "Mid-Continent play" in Michigan.

Hotels in Mt. Pleasant have been jammed while prices offered for leases and royalties were reported to have set record figures. How many of the "record price" offers actually were consumated into cash deals could not be immediately sifted out. Reported prices up to $1000 an acre for royalty more than a mile from the Durbin well were offered. Lease prices ranged accordingly.

Simrall Pipeline Company completed a nine-mile four-inch line from the Durbin lease to Riverdale on March 4 to relieve truck deliveries the first four days the well was on production. Pure Transportation Company started construction of a nine-mile six-inch line from the lease to Vestaburg on April 2. Approximately 1500 to 2500 barrels of oil per 24 hours has been run from the lease to date.

Tests taken on April 1 showed little variation of the original production of 3600 barrels daily and after seven days on production the well was cutting less than one-half of one percent water.

The Leonard-Durbin test, a rank wildcat, is located in Montcalm County, (Crystal township), 10n-5w-11, and is believed to have opened a prolific new producing horizon in Michigan. Geologists were still pondering over samples in an effort to determine whether production is from Dundee or Monroe lime. It is producing from 3198 feet, elevation 790 feet, and lime top 3189 feet.

The following rigs were up the first of the week: McClanahan Oil Company's Flint 1, 10n-5w-11, NE NW NW; J. W. Leonard, Jr.'s West 1, NE NE NW, 11; West 2, NW NE NW, 11; Eastern Gulf's Barger 1, SW SW SE 2; Daily Crude Oil Company's West 1, NE SE SW 2. Other locations included Fred Turner's McConkie 1, NE S½ SW 10; T. F. Caldwell's Robinson 1, NE NE NE 2; Pure Oil Company's Bennett 1, NW NW NW 12, and Virgil Kirkham's Culy 1, NW SW NW 23, all 10n-5w.

C. R. Gallagher moved in a rig on the Atkin 1, Gratiot County, 10n-4w-17, a wildcat location 3½ miles southeast of the Durbin and Mammoth Petroleum Company started to move in on the Dr. Graham 1, SW SE SW 31, 11n-4w, two miles northwest of the Durbin.

Despite the speed in which operators are showing in moving in on the play, probably no completions in the immediate area will be made for 60 days or more. Contractors will find more trouble than in the other fields of the state developed to date largely from the drift, which on the few scattered wildcats which have been drilled has given considerable trouble.

Michigan Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
MIDLAND COUNTY—		
Mich. Producers, Refiners' Pringle 1, 14n-2w, ne ne sw-14	20	3553
Atha Oil Co.'s La Londe 1, 13n-1e, nw sw-27	10	3490
ISABELLA COUNTY—		
Elmer Brehm's West 1, 14n-4w, se ne se-25	15	3565
W. J. Bernier's Gatehouse 1, 15n-6w, sw sw-36	¶2	1312
Pure Oil Co.'s Baker 1, 13n-5w, sw nw se-15	*	4253
OGEMAW COUNTY—		
Webber Oil Co.'s Zahm 1, 22n-2e, ne nw nw-34	12	2690
Muskegon Dev. Co.'s Schulty 1, 22n-2e, ne ne se-29	15	2695
M. J. Ingold's Zettle 1, 22n-1e, sw sw sw-13	5	2829
R. L. Hill's Jaqua 1, 21n-3e, se ne sw-6	300	1820
MECOSTA COUNTY—		
Taggart Bros.' State 1, 14n-9w, c-ne sw-11	¶7	1379

*Failures; †Junked; ¶Mil. cu. ft. gas.

Eastern Fields Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
PENNSYLVANIA		
WASHINGTON COUNTY—		
Natural Gas of W. Va., Ealy 1	¶	....
WEST VIRGINIA		
CALHOUN COUNTY—		
McIntosh, W. E. Stump 1	¶	2610
A. Rothwell, J. H. Sturms 1	2	2295
ROANE COUNTY—		
Kenny M. Hunt & Co., T. J. Murray 1	¶	1635
RITCHIE COUNTY—		
Clem S. Morris, W. E. Cox 1	¶	1844
H. H. Gainer, F. L. Lambert 1	¶	1875
SOUTHEASTERN OHIO		
NOBLE COUNTY—		
C. M. Hutchinson, T. C. Rich 3	¶	1542
J. B. Hutcheon, Wm. Patton & Co. 4	¶	1430
MONROE COUNTY—		
G. C. & Joseph Burkhead, J. A. Albright & Co. 2	*	2040
Eliza Baker, Gordon Green & Co.3	¶	1496
L. E. Stoffell, Mike Stoffell 2	¶	1290
H. Burkhart, Day Oil & Gas Co. 5	¶	1710
C. G. & J. K. Robinson, Local Co. 1	¶	1455
WASHINGTON COUNTY—		
James M. Dow, Local Co. 8	5	1668
James A. Wickens, Wickins & Aiken 18	6	1027
L. C. Moore, Harry Binegar 6	¶	1967
Ray Hasley, Burns Run Oil Co. 6	2	812
Peter Zumbro, Local Co. 3	¶	1054
CENTRAL OHIO		
MEDINA COUNTY—		
Clyde L. Rose, Ohio Fuel Gas Co. 1	¶	3397
Davis & Ferguson, McCullen & Dempsey 3	¶	430
Anton Kungli, J. A. Price 7	*	442
CUYAHOGA COUNTY—		
Ferro Enamel Co., Ferro Enamel Co. 1	¶	2955
SUMMITT COUNTY—		
A. & M. Wise, East Ohio G. Co. 2	¶	3510
TRUMBULL COUNTY—		
Lawrence Booth, Kime & Co. 1	*	300
STARK COUNTY—		
Harvey Miller, East Ohio Gas Co. 1	¶	4519
Anna R. Snyder, Brendel Prod. Co. 1	*	4501
HOLMES COUNTY—		
Fee, Holly T. Schneeberger 1	*	1038
KNOX COUNTY—		
John McKnabb, Upham Gas Co. 1	¶	....
COSHOCTON COUNTY—		
Chas. McCoy, E. J. Edman 1	¶	870
GUERNSEY COUNTY—		
Jennie Rose, J. T. Roach 6	¶	1566
ATHENS COUNTY—		
Henry Callentine, Ohio F. G. Co. 1	¶	1428
MEIGS COUNTY—		
Ida M. Heacock, I. M. Heacock 2	¶	424
Emil Johnson, Ray Holmes & Co. 1	¶	1926
Addie Philson, Meigs Dev. Co. 2	¶	1990
MUSKINGUM COUNTY—		
Albert P. Dozier, Hopewell 1	¶	4135
PERRY COUNTY—		
Ray Helser, Wehrle Bros. 1	*	2765
KENTUCKY		
OHIO COUNTY—		
Sidney Lancaster, Cumberland Petroleum Co. 14	15	....
Frank Hanna, South 140-a, D. T. Bolling 8	15	....
J. H. Roberts, Stewart & Gealey 10	45	....
James Roberts, Stewart & Gealey 6	30	....
F. E. Midkiff, Snowden-McSweeney Co. 5	20	....
G. Richards, Cumberland Pet. Co. 5	20	....
J. T. Smith, Mecca Oil Co. 10	50	....
C. W. Murphy, Mark & Bell 3	¶	....
ILLINOIS		
ST. CLAIR COUNTY—		
G. L. Tarlton, Tr., Ohio Oil Co. 6	70	....
CLARK COUNTY—		
Sarah Phillips, E. R. Phillips 10	*	....

*Failures; †Junked; ¶Mil. cu. ft. gas.

Drilling Reports on Important Wildcats

OKLAHOMA

ATOKA COUNTY—H. F. Potts' Nichols 1, sw sw nw 32-2s-9e, dr 2205 ft. Clark et al's Morrison 1, se se se 32-1n-14e, sd 80 ft.

BECKHAM COUNTY—Fred Coogan et al's Shelton 1, sw sw sw 33-10n-25w, dr 3481 ft.

BLAINE COUNTY—Earl Ingrahm et al's Masters 1, sw nw nw 27-16n-11w, co.

BRYAN COUNTY—C. B. Welch's Collins 1, sw sw nw 19-8s-8e, dr 545 ft. Trio Oil Co.'s Gilbert 1, se se se 25-8s-7e, dr 252 ft.

CADDO COUNTY—Denver P. & R. Co.'s Sah-Cam 1, cse se 33-10n-10w, td 190 ft. H. W. Lee et al's Horton 1, ne ne ne 9-6n-13w, br.

CANADIAN COUNTY—Carl Larkin's Brobine 1, nw nw ne 33-13n-5w, dr 1255 ft.

CARTER COUNTY—Carter Oil Co.'s Humble-Williams 1, sw ne sw 27-2s-3w, dr 4908 ft. Waco Turner's A. F. Munson 1, ne nw ne 35-5s-2w, dr 1510 ft.

CHOCTAW COUNTY—Rhodes et al's Pussumik Savings Bank 1, se se se 1-5s-17e, lcn.

CLEVELAND COUNTY—Sinclair Prairie Oil Co.'s Franklin Community 1, se nw se 21-10n-2w, td 5847 ft.

COMANCHE COUNTY — F. F. Stevens' Green 1, se se sw 2-1n-13w, dr 1487 ft. Henry Rosenthal et al's Au-chi-re-ah 1 "B", nw nw nw 5-1n-9w, td 1493 ft, ru to dd.

GARFIELD COUNTY — Herndon Drilling Co. et al's Allen 1, cne ne sw 35-24n-3w, td 4870 ft, comp.

GARVIN COUNTY—National Production Co.'s Littrell 1, ne ne ne 31-2n-3w, td 1528 ft, to dd. George Pace's Smith 1, sw sw ne 35-1n-1e, sd 1265 ft, going back in hole. Anderson-Kerr et al's Rodke 1, nw nw se 17-4n-1w, lcn.

GRANT COUNTY — Helmerich-Payne's Crouse 1, cne sw 29-25n-8w, dr 6065 ft.

GREER COUNTY—Fred Morgan et al's H. G. Carder 1, csw se 19-4n-22w, sd 1012 ft. M. C. Ent & R. C. Camp's Siminton 1, sw sw se 29-5n-21w, ru mach. J. M. Wren & R. W. Slemaker's 1, cse ne 35-5n-23w, lcn.

HARMON COUNTY—Jud Leath et al's McConnell 1, nw nw nw 22-3n-24w, waiting on dr water. Wilson & Walker's Wilhelm 1, se se se 30-4n-24w, sd 30 ft. D. E. Whatley et al's Hamilton 1, nw nw se 25-4n-24w, cellar.

HUGHES COUNTY—Freeman et al's Kite 1-A, nw nw ne 8-6n-10e, sd 598 ft. Dandridge & Crane's Mead 1, nw nw ne 17-5n-9e, dr 1335 ft. Amerada Pet Corp.'s Adams 1-A, ne ne sw 31-9n-9e, pb 4095 ft, to shoot.

JACKSON COUNTY—Palo Duro Oil Co.'s Ealum 1, se se sw 15-2n-21w, ur 10-in csg 848 ft. Scheig's James 1, ne ne ne 23-1n-20w, sd 1904 ft. Associated Oil Co.'s Harrell 1, ne ne sw 13-1s-21w, dr 1240 ft. Whatley & Whatley's Holt 1, nw sw se 20-1n-20w, dr 1318 ft. A. H. Emenhiser's Murrell 1, se sw se 17-3n-21w, sd 910 ft. Jack Kilgore et al's Wooldridge 1, se se ne 15-3n-21w, td 1705 ft. Golden & Cochran's L. H. Duncan 1, sw sw ne 34-2n-21w, dr 1800 ft. Scheig et al's Sue Richardson 1, sw nw se 21-1n-19w, lcn. J. G. Buell et al's M. E. Kizzar 1, se se ne 2-2n-22w, cr 1325 ft. Triangle Oil Co.'s Fox 1, csl se nw 11-3n-20w, fsg 600 ft. Burke-Greis Oil Co.'s Milbrant 1, sw nw sw 31-3n-19w, lcn. Gypsy Oil Co.'s Boucher 1, nw sw sw 32-1n-19w, dr 690 ft. Marshall & Burnham's Hess 1, ne ne sw ne 27-1s-20w, mach.

JEFFERSON COUNTY—Gypsy Oil Co.'s James 1, sw se se 30-6n-6e, dr 525 ft.

KAY COUNTY—Harris-Haun's Schuessler 1, cnw sw 3-28n-2e, dr 3220 ft. J. T. Lindsay's Waggoner 1, nw nw ne 3-27n-1e, lcn.

KIOWA COUNTY—Henson & Patton's Beeler 1, ne ne ne 11-6n-15w, dr 594 ft. Buell & Herndon's Haught 1, se se ne 22-1n-16w, ru.

LINCOLN COUNTY—Carter Oil Co. et al's McFarland C-38 1, sw sw ne 18-13n-4e, dr 3107 ft. Stanolind Oil & Gas Co. et al's Campbell 1, sw sw nw 3-14n-3e, wocs.

LOGAN COUNTY—Sinclair Prairie Oil Co.'s School Land 1, se se se 36-17n-1w, pb 5266 ft, flowed 63 bbls oil and 5 bbls water in 10 minutes, testing. Slick-Urschel's Pennington 1, csw ne 10-16n-1w, td 5587 ft, lost circulation. Sinclair Prairie Oil Co. & Slick-Urschel's Koatsch 1, sw sw sw 23-15n-3w, cored 6168-88 ft, cored 6204-54 ft, to run 7-in csg. Mid-Continent's Community Nunn 1, se se nw 25-15n-1e, lcn. Anderson- Kerr et al's Renfro 1, ne ne ne 33-16n-4w, dr 3105 ft. J. C. Shaffer's Hammond 1, se se sw 10-15n-4w, fsg 5575 ft.

LOVE COUNTY — Amerada Pet Corp. & Stanolind Oil & Gas Co.'s Westheimer & Daube 1, nw se se 27-6n-2e, td 1827 ft.

MARSHALL COUNTY — Paul R. Robb's Vittetoe 1, cne se 11-5s-4e, dr 5335 ft.

McCLAIN COUNTY—Anderson & Kerr's Newburn 1, nw sw ne 24-5n-3e, dr 375 ft.

MURRAY COUNTY — Manahan Oil Co.'s Watd 1, ne se nw 18-1s-3e, dr 1702 ft. Equitable Oil & Gas Co.'s Bear 1, sw nw nw 21-1s-3e, dr 625 ft. Equitable Oil & Gas Co.'s Ferguson 1, ne ne sw 36-1s-3e, rust.

NOBLE COUNTY — Stanolind Oil & Gas Co., Amerada Pet. Corp. & Slick's Fuller 1, cse sw 34-20n-2w, dr 4982 ft.

OKFUSKEE COUNTY—Amerada Pet. Corp. et al's Jaynes 1, nw nw sw 20-10n-10e, td 4025 ft, 275 ft water in hole, sd.

OKLAHOMA COUNTY—Anderson-Kerr et al's Linn 1, sw sw nw 17-14n-2w, dr 6211 ft. W. H. Atkinson et al's Reed 1, ne ne ne 4-12n-3w, dr 5100 ft. Gypsy Oil Co.'s Schock 1, nw sw sw 2-14n-3w, dr 3110 ft.

PAWNEE COUNTY—Trees Oil Co.'s Susan Wedd 1, cse se 27-24n-5e, mit.

PITTSBURGH COUNTY—P. H. Gray et al's Lee 1, nw nw se 12-5n-13e, fsg 1210 ft.

PONTOTOC COUNTY—Paramount Oil Co.'s Graham 1, sw se sw 13-1n-7e, td 3450 ft. Mudge Oil Co.'s Clampett 1, sw nw nw 10-2n-6e, sd 915 ft. Crabb-Craw Oil Co.'s Breco 1-A, se ne sw 3-4n-6e, sd. Southern Oil Co.'s Walker 1, nw nw sw 11-4n-6e, dr 1142 ft. Crabtree's Chandler 1, ne se sw 4-5n-6e, dr 775 ft. Gillette & Kroeger's Duver 1, nw nw se 36-1n-6e, dr 1247 ft. Fleetborn Oil Corp.'s Oliver 1, ne nw se 21-4n-5e, sd 785 ft. Phillip Boyle's McCracken 1, ne nw nw 31-5n-4e, wocs. Delaney et al's Fulsame 1, se se ne 35-4n-6e, lcn.

POTTAWATOMIE COUNTY—C. W. James et al's Neal 1, nw se sw 4-5n-3e, pb 2739 ft, rip 8-in csg 2690-2700 ft, hole full of mud. Howard Sherman et al's O. N. Wingo 1, ne nw se 32-10n-5e, dr 4115 ft.

PUSHMATAHA COUNTY—William Ungerman's Messer 1, se sw sw 35-3s-18e, dr 2950 ft, hfw.

SEMINOLE COUNTY—Ray Dorris & J. T. Hall's Dorris 1, se se sw 31-10n-7e, sd 608 ft. Sovereign Drilling Co. et al's Thomas 1, nw nw se 8-6n-7e, flowed 100 bbls oil in 2 hours.

STEPHENS COUNTY—Wm. Angle et al's Cooper 1, ne nw nw 23-2n-7w, 1440 ft.

TILLMAN COUNTY—Laper et al's Conrad 1, ne ne ne 35-1s-19w, fsg 840 ft. Cockburn & Boose's Nichols 1, se se se 28-2s-19w, dr 915 ft.

ABBREVIATIONS

The following abbreviations, signs, etc., are used in completions and wildcat reports in THE OIL WEEKLY.

* —*dry hole abandoned well.*
‡ —*salt water (completions).*
† —*junked and abandoned.*
¶ —*million feet of gas.*
abd —*abandoned.*
bbls —*barrels.*
br —*building rig.*
b.s. —*basic sediment.*
csg —*casing.*
co —*cleaning out.*
dd —*drilling deeper.*
dk —*derrick.*
dr —*drilling.*
fsg —*fishing.*
ft —*feet.*
hfw —*hole full of water.*
in —*inches.*
lcn —*location.*
m —*milling.*
mim —*moving in materials.*
mit —*moving in tools.*
mot —*milling on tools.*
n, s, e, w, —*north, south, east, west.*
oih —*oil in hole.*
otd —*old total depth.*
owdd —*old well drilling deeper.*
owpb —*old well plugging back.*
pb —*plugged back or plugging back.*
r —*reaming.*
rog —*rig on the ground.*
rur —*rigging up rotary tools.*
rust —*rigging up standard tools.*
sd —*shut down.*
sdtr —*sidetracking.*
sg —*show gas.*
si —*shut in.*
so —*show oil.*
so & g —*show oil and gas.*
spd —*spudding.*
sr —*straight reaming.*
sw —*salt water.*
td —*total depth.*
ur —*underreaming.*
wih —*water in the hole.*
wo —*workover.*
wocs —*waiting on cement to set.*
wosr —*waiting on standard rig.*

KANSAS

BARTON COUNTY—Lario Oil & Gas Co. et al's Nuss 1, nw sw sw 11-16s-14w, dr 235 ft. Wolf Creek's Kraft 1, sw sw sw 26-16s-11w, fsg 2810 ft. Suppes & Witts' Hayes 1, sw sw sw 6-16s-14w, rig. McMorrow & Spencer's Hagen 1, ne ne ne 33-20s-11w, dr 2670 ft. Pryor & Lockhart's Herrington 1, ne ne nw 6-16s-12w, rig.

BUTLER COUNTY — Tree & Harwood's Henleyl, sw se ne 7-24s-8e, td 2000 ft, comp.

CLAY COUNTY—Seidel Brothers' Younken 1-A, cs½ se nw 21-9s-4e, 670 ft oih, set 4-in liner 1770 ft, no test.

COWLEY COUNTY—McCoy's Brandenburg 1, sw sw se 17-34s-5e, td 1755 ft, ur 10-in csg. Lloyd, Frost & Study's Weathered 1, sw se se 28-31s-3e, dr 1300 ft. Ostat et al's Eckhardt 1, se se nw 15-35s-6e, spd and sd.

DICKINSON COUNTY — Dutch Oil Co.'s Phillips 1, cne nw 15-15s-1e, sd 2714 ft.

ELK COUNTY—Lee Tiffey et al's Stonebreaker 1-A, se se se 32-28s-11e, sd 1175 ft.

ELLSWORTH COUNTY—Carter Oil Co. et al's Teubner 1, se se nw 26-17s-9w, td 3179 ft, no test. Pryor & Lockhart et al's Gregory 1, se se se 19-16s-8w, so 2815-25 ft & 2921 ft, dr 2935 ft. Lario Oil & Gas Co. et al's Wright 1, sw sw ne 17-16s-8w, dr 2550 ft. Lario Oil & Gas Co. et al's Central National Bank 1, se se nw 33-15s-8w, mim. Lario Oil & Gas Co. et al's State 1, sw sw sw 29-15s-8w, dr 1245 ft. Western Exploration Co.'s Wilkins 1, nw sw nw 9-17s-9w, lcn.

HARVEY COUNTY—H. H. & S. Oil Co.'s Frizzle 1, ne ne se 31-23s-2w, ponds. Twin Drilling Co. et al's Ruth 1, sw sw sw 16-22s-2w, dr 925 ft. Goering Brothers' Brainard 1, ne ne sw 3-23s-2w, ru.

McPHERSON COUNTY—Lario Oil & Gas Co.'s Base 1, sw sw sw 22-20s-2w, dr by tools 3519 ft. Palmer Oil Corp.'s Swenson 1, ne ne sw 11-18s-3w, dr 2465 ft. Brosius et al's Hanson 1, nw nw sw 15-17s-2w, sd 1108 ft. Shell Pet. Corp.'s Wenger 1, ne ne ne 2-20s-1w, rust. W. C. McBride's Mugler 1, se sw sw 22-20s-3w, co 2324 ft.

NESS COUNTY—Phillips Pet. Co.'s Young 1, cnw sw 13-18s-21w, cored 3620-35 ft. Atlantic Oil Co.'s Mark "A" 1, cse se 28-20s-23w, ru.

OSAGE COUNTY—Jim Edwards' Deitrick 1, cnw se 21-14s-15e, fsg 798 ft.

PAWNEE COUNTY — Atlantic Oil Co.'s Slepake 1, cne ne 15-23s-17w, ru.

RENO COUNTY — Privett Drilling Co.'s Crotts 1, ne nw ne 27-26s-10w (owdd), fsg 4338 ft.

RICE COUNTY—Allison & Fitzwilliams et al's Stumps 1, nw nw sw 4-18s-10w, td 3261 ft, est 40 bbls oil daily. Foraker-Nickerson et al's Lyon 1, se se ne 27-20s-8w, dr 3344 ft. Vickers Pet. Co. et al's Gouldner 1, se ne nw 16-18s-9w, sg 2020 ft, dr 2060 ft. Day's Mason 1, nw ne ne 28-21s-7w, dr 575 ft. Gypsy Oil Co.'s Kessling 1, nw nw sw 10-20s-19w, pumped 48 bbls oil 7 hrs, td 3264 ft. Fred Rust et al's Brown 1, ne ne ne 16-21s-6w, ponds.

ROOKS COUNTY—Smith & Ash's Nelson 1, nw nw ne 27-10s-16w, ru. Trees Oil & Findeiss' Johnson 1, sw sw se 26-10s-19w, spd.

RUSH COUNTY—Lario Oil & Gas Co. & Phillips Pet. Co.'s Benbow 1, nw ne ne 12-17s-19w, fsg 3790 ft. Morgan & Flynn et al's

Schlegel 1, se se nw 26-17s-16w, dr 1185 ft. Boyle & Grossman et al's Yost 1, csw sw 23-17s-18w, ru.

RUSSELL COUNTY—Wolf Creek et al's Penn Mutual 1, sw sw sw 22-15s-15w, td 760 ft. Murphin's Funk 1, sw sw sw 19-12s-13w, fsg 3040 ft. Reserve et al's Moore 1, cnw nw sw 15-13s-12w, mim. Hartman & Blair's Hildebrandt 1, nw ne sw 12-14s-14w, fsg 2280 ft. Vernon & Murphin's Becker 1, ne ne ne 33-15s-14w, ru. Ryan Pet. Co.'s Newbold 1, nw se ne 25-12s-15w, dr 850 ft. Winkler-Koch's Harman 1, se se nw 27-12s-15w, spd & sd.

SALINE COUNTY—Dieter et al's Herrington 1, ne nw se 3-13s-1w, td 3125 ft.

SEDGWICK COUNTY — Western Kansas Oil & Refining Co. et al's Betzen 1, se se ne 17-16s-3w, spd.

STRATFORD COUNTY—Lario Oil & Gas Co. et al's Tudor Morgan 1, se se nw 23-24s-13w, td 3597 ft, wocs.

SUMNER COUNTY—Tom Palmer's Wentworth 1, nw nw ne 9-35s-2e, td 3475 ft, comp. Wakefield et al's Newton 1, se se se 21-30s-2e, rig. Shell Pet. Corp.'s Green 1, se sw nw 3-33s-2e, dr 1980 ft.

TREGO COUNTY—Jenman Oil Co.'s Jones 1, se se se 20-12s-23w, cored 3828-80 ft, set 7-in csg 3861 ft, wocs. Hansa & Lauck's Lang 1, se se nw 1-14s-21w, cellar.

WOODSON COUNTY—Kite et al's Gorman 1, ne ne nw 18-25s-14e, dr 630 ft.

CALIFORNIA

KERN COUNTY

ALPAUGH—Trico Oil & Gas Co., Well 4, 3-25-33, rur.

ARVIN—General Pet. Mattson 1, 1-32-29, rur. Hall-Baker Co., Core Hole 4-4, 16-31-30, testing zone 1106-1127.

NEAR BELRIDGE—Continental, Maylan 1, 7-28-20, td 730 ft, 16 in 20 ft, Spud 3-31-35, drlg.

BUENA VISTA LAKE—B. V. A. 1, 9-32-25, td 5415 ft; 13⅜ at 1035 ft; sd and sh, drlg.

CALIENTE—Signal O&G Co., S. P. Land Co. 1, 31-29-30, td 2290 ft; 12¾ at 305 ft. Idle. Woodward Oil Co., Batz 1, 36-29-29, td 520 ft, sh, fsg bailer; S. P. Land 2, 31-29-30, td 497 ft, 8⅝ at 385 ft, cld out to bottom, sd and oil.

COMANCHE POINT—Tejon Ridge Oil Co., Weil 1, 23-32-29, td 1685 ft, sd and sh., showing some gas.

EDISON—Cara Vet. Pet. Corp., Well 1, 19-30-30, td 1940 ft, 8⅝ 1840 ft, idle. Mountain View Dev. Corp., Spangler 1, 12-30-28, td 5122 ft, 7-in 4994 ft, shale, fsh tbg, sd lime and swab.

GOULD HILLS—Jarew How 1, 29-29-21, td 4513 ft, 16-in 198 ft, equipment moved.

GREENFIELD—Big McKittrick Oil Co., Sea Cliff-Houghton 1, 7-31-28, 9-inch 685 ft, td 4670 ft, sd and sh, showing gas.

KERNELL—Standard Oil, Widgeon 1, 1-25-23, td 2478 ft, 13⅜in 575 ft, bl sh, showing gas.

LOST HILLS—Standard Oil, United 1, 2-26-20, td 3388 ft, 22-inch 1653 ft, froze D. P. at 3346 ft, fsg.

PREMIER—Wendell, Smith 1, 2-27-27, rig.

SOUTH BUTTONWILLOW — Seeple Oil Corp., Well 1, 5-30-24, td 3730 ft, 13⅜ in. 480 ft., idle.

SOUTH DOME—Continental Oil Co., Gatchell 28-7, 7-25-20, td 4807 ft, 11¾ in. 3532 ft, hd sh, drlg.

TEMBLOR HILLS—Robert Foster, Well 1, 2-32-22, td 2440 ft, br sh, drlg.

WHEELER RIDGE — Badger Oil Co., El Tejon 1, 31-11-19, td 6229 ft, 12½ in, 100 ft, susp. Reserve O&G, Tejon Ranch 1, 2-10-19, 3708 ft, 12½ in 575 ft, idle; Tejon Ranch 2, 12-10-19, td 1900 ft, sh, drlg.

WEED PATCH—Assoc. Oil Co., Di Giorgio 1, 3-31-29, td 5501 ft, 6⅝ in 4970 ft, abd.

KINGS COUNTY

ALPAUGH — Trico O&G Co., Magee & Stone 3, 36-24-22, td 3790 ft, 8⅝ in 2563 ft, sh, drlg.

PYRAMID HILLS—Gen. Pet. Corp., Martin 1, 20-24-18, td 1089 ft, hd br sh, drlg.

MISCELLANEOUS NORTHERN COUNTIES

FRESNO COUNTY—Milham Explor. Co., Oro Loma 1, 12-12-11, td 750 ft, sd, spud 4-2-35. Russ Oil Synd., Well 1, 28-12-11, td 5015 ft, 10¾ in 2215 ft, idle, will drop from report.

HUMBOLDT COUNTY—The Texas Co., Eureka 1, 1-3-2, td 5396 ft, 18⅝ in 1115 ft, sd and sh, drlg.

SACRAMENTO COUNTY—Great American Pet. Co., Howard 1, 25-2-8, td 2952 ft, 8⅝ in 2952 ft, 8⅝ in stg., cmtd 2952 ft.

SAN JOAQUIN—Amerada Pet. Corp., F. D. L. 1, 15-2-5, td 1321 ft, 18⅝ in 1268 ft, sd and sh, drlg.

SUTTER—Butter Oilfields, Inc., Well 2, 35-16-1, td 7014 ft, 13⅜ in 986 ft, est 1500 mil cu ft dry gas on test, shut in.

TEHEMA COUNTY — Northern Counties Pet. Co., Erers Mooney 1, 25-24-3, td 3195 ft, 16 in 709 ft, hd sh.

SANTA BARBARA COUNTY

GOLETA—Shell Oil Co., Bishop 1, 20-4-28, td, 6508 ft, 6⅝ in 5136 ft, pg 4170 ft, opened up 4-4-35, 15,000 mil cu ft gas, 1 in. and 80/64 beans. West Elwood Oil Co., Simonds-Campbell 1, 9-4-28, td 3650 ft, 12½ in 150 ft, hd sh, idle.

LOMPOC—M. J. Freeman, LaBrea 1, 11-7-33, rur. Lompoc Pet. Co., Beauterbough 2, 18-7-34, td 3045 ft, 7 in 2570 ft, hd sd.

NAPLES—Power & Snow, Well 1, 7-4-29, td 6100 ft, 12½ in 290 ft, sdy sh, drlg.

SAN LUIS OBISPO

CHOLAME—Willett Oil Assn., Jack 2, 10-25-15, td 3560 ft, 8⅝ 2930 ft, 8⅝ in stdg cmtd.

VENTURA COUNTY

BADSDALE—El Rancho Oil Co., Elkins 1, 9-3-19, td 300 ft. clg out. Union Oil Co., Dryden 1, 12-3-20, bldg rig.

CONEJO — International Oil Developers, Powell 1, 33-2-20, td 3060 ft, 10 in 2286 ft, perf by stages to 1550 ft, rng tbg.

HOPPER CANYON — Oil Ridge Oil Co., Moran 3, 1-4-19, td 1535 ft, 6 in. 1161 ft, pulled 5 in., recov fsh, idle.

LAS POSAS—Las Posas Pet. Co., Mahan 1, 22-3-20, td 8120 ft, 8⅛ in 7022 ft, fsg tbg.

OJAI—Continental Oil Co., Pirie 1, 12-4-23, td 2110 ft, 8⅝ 1534 ft, hd sd, no showings.

PIRU—Bachman Pet. Co., Well 14, td 4500 ft, br sh, drlg.

SANTA PAULA — Edw. M. Lesperance, Boosey 1, 31-4-20, td 1050 ft, 12½ in 450 ft, rep engine. J. W. Mosher, Well 1, 22-4-21, td 2300 ft, 6¼ in 1620 ft, fsg 4¾ csg.

SANTA SUSANT—American Drilling Co., Well 1-A, 31-3-17, td 700 ft, idle.

SESPE—Supreme Oil Co., Well 1, 1-4-20, td 300 ft, idle account rain.

SHIELLS CANYON—The Texas Co.-Shiells 128, 4-3-19, td 6121 ft, 8⅝ in 4280 ft, sh and sd, drlg.

SIMI—Dawson Oil Co., Well 1, 8-2-17, td 1910 ft, 8⅝ in 1510 ft, clg out. Paloma Oil Co., Paloma-Marr 1, 12-2-18, td 650 ft, sd and sh, drlg.

SOUTHERN CALIFORNIA

ARTESIA—Vanco Development Co., Millard 1, 25-3-12, td 1520 ft, hd sd, gas showings.

BREA CANYON—Pressel-Perry-Tull, Baird 1, 30-2-9, td 4176 ft, 11¾ in 94 ft, hd gr sh, drlg.

EL SEGUNDO—Republic Pet. Co., Well 1, 18-3-14, td 4815 ft, hd br sh and gr sd, drlg.

FAIRVIEW—Explorers Drlg. Co., Norris 1, 9-6-10, td 960 ft, 6¼ in 460 ft, idle.

HUNTINGTON BEACH—Black Eagle Oil Co., Permit 194, 32-5-11, td 4702 ft, 5 in 4265 ft, prep to pump.

MANHATTAN BEACH—Bethlehem Explor. Co., Martin 1, 30-3-14, td 6709 ft, 8¼ 3835 ft, sd and sh, coring.

NEWPORT—Si Rubens, Well 1, 14-6-10, td 2574 ft, rur.

PICO—Frontier Oil Co., Well 1, 12-2-12, td 3030 ft, 12½ in 500 ft, sh, drlg.

PUENTE—N. O. Shively, Rowland 1, 23-2-10, td 3145 ft, 6⅝ 2850 ft, prep to test, C. P. job on 6⅝ in.

SAUGUS — International Oil Developers, Powell 1, 34-5-16, td 301 ft, 6⅝ in 4138 ft, testing.

TOPANGO COUNTY—Monarch Pet. Co., Sylvia Park 1, 5-1-16, rig.

SAN BERNARDINO COUNTY — Great Amer. Pet. Co., Gapco D-1, 18-2-8, td 323 ft, gr sd, drlg.

SAN DIEGO COUNTY—E. A. Hargrave, Well 1, 29-15-3, td 2300 ft, hd cong. San Diego Gas & Pet. Corp., Well 1, 32-18-2, td 6333 ft, wet on prod test, susp. J. J. Stevens, Well 1, 27-18-2, td 1200 ft, hd sd.

NEW MEXICO

EDDY COUNTY—Geo. F. Getty Oil Co.'s Andrew Dooley 7, swc nw 24-20s-29e, 6000-ft test, elev 3309 ft, dr lime 2710 ft.

LEA COUNTY — Amerada Pet. Corp.'s State 1-F, c sw sw 36-19s-36e, Monument area, top anhydrite 975 ft, dr 1215 ft. Anderson-Prichard Oil Corp.'s Brett-Conoco 1, c ne nw 7-20s-35e, Monument area; lcn; Fisher 1, c se ne 8-20s-35e, elev 3690 ft, fsh 825 ft. Amon G. Carter et al's G. H. Mattix-Conoco 1, c se nw 3-24s-37e, dr 330 ft. Jeffers Oil Co. (Anderson-Prichard's) Etz-Conoco 1, ce ne sw 12-21s-32e, lcn; Jiminez-Conoco 1, c se sw 11-20s-32e, lcn. R. H. Henderson et al's P. J. Langley 1, c se se 8-25s-37e, elev 3162 ft, top salt 1205 ft, making gas, fsh tools 2875 ft; Russell-Steele 1, c ne nw 24-20s-33e, elev 3627 ft, dr 3500 ft. Humble's J. L. Coates 1, c nw ne 10-24s-36e, elev 3383 ft, junked gasser, td 3365 ft; Coates 1-A, relief well, elev 3385 ft, top anhydrite 1324 ft, top salt 1433 ft, td 3394 ft, pumping 300 bbls water per hr to flood Coates 1; F. M. Saunders 1, c ne ne 4-22s-34e, elev 3641 ft, top anhydrite 1730 ft, top salt 1755 ft, top brown lime 3790 ft, sd 4140 ft. Maljamar O&G Corp.'s P. Miller 1, c nw sw 23-17s-32e, top anhydrite 790 ft, top salt 955 ft, elev 3992 ft, dr 2525 ft. Nat'l Securities Oil Corp.'s V. Linam 1, nec s½ sw 33-18s-37e, elev 3712 ft, top anhydrite 1580 ft, logged salt 1716-2650 ft, top lime 2956 ft, dr 4475 ft. Repollo Oil Co.-Anderson-Prichard Oil Corp.'s B. W. Arnold 1, swc nw se 6-20s-32e, elev 3567 ft, top anhydrite 1540 ft, salt 1637-2695 ft, dr 3600 ft. Rowan Drilling Co. & Neville G. Penrose's E. M. Elliott-Conoco 1, c ne sw 17-22s-37e, dr 665 ft. Shell Pet. Corp.'s State-Endura 1, c se ne 12-21s-35e, elev 3588 ft, top lime 3020 ft, pb from hfw 4404 to 3987 ft, treated with 3000 gals acid, pb to 3926 ft and shot with 30 qts nitro 3860-3910 ft, testing. The Texas Co.'s Saunders 1, c se sw 18-19s-37e, Monument area, lcn. The Texas Co.-Amerada & Columbian Carbon Co.'s Parker 1, c nw nw 29-26s-37e, elev 2952 ft, sd for acid treatment, td 3193 ft. W. L. Todd and The Texas Co.'s Fred Cole 1, c ne ne 35-19s-33e, elev 3603 ft, top salt 1540 ft, dr 3245 ft. Sam K. Vierson et al's W. D. Robinson 1, c nw se 14-11s-32e, elev 4355 ft, rig.

SAN JUAN COUNTY — Continental Oil Co.'s Rattlesnake 43, nw se nw 12-39n-19w, mim. Al Greer's Thompson 1, se sw 10-30n-11w, mim to lcn. Phillips & Healey's 2, sec 34-30n-11w, running csg to 500 ft. Nick Spatter's Test 1, ne sw 32-31n-11w, sd at 1480 ft.

SANTA FE COUNTY—Fisher & Wolcott's Hill 1, sw 6-10n-7e, Barton Dome, sd in schist at 2750 ft.

WYOMING

BIG HORN COUNTY—California Exploration Co.'s Government 1, csw sw 4-54n-94w, dr at 1000 ft. Jerome Drumheller's Martin 1, se se 17-49n-91w, pumped 15 bbls 24 hrs at 1380 ft, after pb from 1460 ft with 5-in csg set at 1325 ft, and is pulling rods and tubing preparatory to further testing. Yale Oil Corp.'s Blakesley 1, ne ne nw 28-49n-91w, 1235 ft oil in hole bottomed at 1425 ft with 8-in cas set at 1395 ft. Preparing to swab.

CARBON COUNTY—Ohio Oil Co.'s Sid Morris 1, cnw se 6-20n-77w, pb from 7360 ft, where it had water in the Tensleep sand, to test upper horizons. Ohio Oil Co. and California Oil Co.'s Kyle 1, Big Medicine Bow dome, ne se ne 26-21n-79w, cementing 7-in production string at 5159 ft after developing 36,000,000 cu. ft of gas on the drill stem between 5151-5206 ft in the Sundance formation. Earl W. Reader, Inc.'s Whitford 1, sw se se 24-20n-84w, dr out plugs after cementing collapsed joint of 10-in csg with td of 3595 ft on top of General Petroleum series.

CONVERSE COUNTY—John Ackard's Daniels 1, sw sw se 17-32n-71w, dr at 2600 ft. F. P. Dilger's Government 1, se ne sw 33-31n-72w, dr at 1100 ft.

FREMONT COUNTY — Mid-American Oil Co.'s Government 2, cne sw 14-28n-92w, running rods and tubing to test saturated Embar

lime between 2175-2260 ft. Monongahela Oil Co. & S. H. Keoughan's Wisda 1, ne se se 13-28n-93w, rigged and ready to resume.

WASHAKIE COUNTY — Wyoming Oil & Refining Co.'s Frison 1, nw sw nw 14-48n-91w, dr at 1338 ft.

COLORADO

HUERFANO COUNTY—S. W. Pressey et al's Ojo 1, sw ne 10-29n-69w, Oak View district, sd at 2550 ft with tools in hole.

JEFFERSON COUNTY — Ruby Hill Oil Co.'s Braden 1, se se 24-4s-69w, near Denver, co to bottom at 4280 ft.

LINCOLN COUNTY—Consolidated Smelting & Metals Corporation's Hancock 1, nw nw se 7-17s-52w, running 12½-in csg to set at 1300 ft.

MONTEZUMA COUNTY—Coon & Teague's (McElmo Oil Co.) West 1, ne nw nw 31-36-17, McElmo district, 250,000 cu. ft gas at 3130 ft with so and co bridge.

PARK COUNTY — South Park Oil Co.'s State 1, se se sw 16-11s-17w, Hartsel anticline, dr at 1375 ft.

PROWERS COUNTY—Trojan Oil & Gas Co.'s Lotus 1, nw ne ne 15-23s46w, Lamar district, dr in sandy lime at 5077 ft.

MONTANA

FERGUS COUNTY — H. C. Rowland's Woodward 1, se se sw 20-14n-24e, dr at 3030 ft. S. W. Pennock's Nordheim 1, nw ne ne 6-21n-18e, resuming at 472 ft.

PHILLIPS COUNTY—Grant Smith's Phillips 4, nw sw 2-24n-23e, Bull Creek, spd at 80 ft. Guy Norman's Pewitt 1, ne nw ne 20-24n-24e, dr at 388 ft.

SOUTH DAKOTA

CUSTER COUNTY—Lewis Gokel's Government 1, csw nw 1-6s-1e, dr below 200 ft in asphalt.

EAST TEXAS

ANDERSON COUNTY—Gulf Prod. Co.'s W. C. Calloway 1, P. Martin sur, Camp Hill area, lcn; M. Maddox 1 (120-ac), D. Stilts sur, elev 657 ft, top Pecan chalk 3970 ft, top Austin chalk 4950 ft, dr 5150 ft; W. B. Robinson 1 (100-ac), D. Stilts sur, elev 630 ft, dr 825 ft; L. B. Ross 1 (35.7-ac), J. C. Rosson sur, elev 654 ft, Pecan chalk 3976-4256 ft, Austin chalk 4936-5131 ft, testing Sub-Clarksville sand 5136½ ft; Mary J. Ross 1 (54.7-ac), Robt. Erwin sur, elev 487 ft, Pecan chalk 3766-3970 ft, Austin chalk 4509-4696 ft, top Woodbine 4749 ft, top sand 4796 ft,tested sw at 4750-4800 ft, top Red Beds 4828 ft, top second sand 4937 ft, top Georgetown lime 5452 ft, dr lime 5475 ft. Gulf and Humble's O. G. Rogers 1 (267½-ac), Daniel Parker sur, 5 mi sw of Elkhart, elev 301 ft, Pecan chalk 4095-4280 ft, top Austin chalk 5047 ft, dr 5280 ft. Hunt Prod. Co.-Sun Oil Co.'s Mrs. Alice Scott-Pure 1 (300-ac), Jas. Crawford sur, Slocum area, lcn. Tide Water & Texas Seaboard's N. N. Wills 21-A, Cayuga field, Trinity test, elev 308 ft, dr 6980 ft; John Smith 1 (49.1-ac), John Adams sur, Long Lake field gas unit, elev 295 ft, cem cas, td 2106 ft; C. T. Valentine 1 (301-ac), John Little sur, 9 mi n of Palestine, lcn.

BOWIE COUNTY—Tex-Ark Oil Co.'s J. B. Hamilton 1 (40-ac), Jessie Milam sur, elev 272 ft, tested water, td 250 ft. A. L. Wills et al's Irene Parsons 1, W. B. Hawkins sur, Old Boston area, lcn.

CAMP COUNTY—E. J. Moran, G. E. and Ray Hubbard's W. M. Mitcham 1 (100-ac), L. Rose sur, 1½ mi n of Newsome, lcn.

CHEROKEE COUNTY—Jacksonville O&G Corp.'s H. D. Henderson 1 (40-ac), J. Pineda sur, elev 409 ft, sd 693 ft. Killough et al's J. S. Strickland 1 (40-ac), Urian Moore sur, 7 mi nw of Jacksonville, elev 433 ft, sd 3505 ft. Ponta Oil Co. et al's C. W. Darley 1 (35-ac), (east) Cyrus Parks sur, 2¼ mi s of Summerfield, elev 434 ft, co 1386 ft. T. J. Wood & Young's New Birmingham 3 (160-ac), Levi Jordan sur, Rusk pool, lcn.

FREESTONE COUNTY—J. A. Hoover and R. J. Bain's W. W. McFall 1 (65-ac), S. Garrison sur, lcn. J. B. Daniel Oil & Royalty Co.'s P. D. C. Ball-Shell 2 (300-ac), J. Y. Aguilera sur, Red Lake area, elev 421 ft; Pecan chalk 3057-3280 ft, top Austin chalk (soft) 4098 ft and hard at 4110 ft, dr 4810 ft.

GREGG COUNTY—O. T. Clark et al's T. G. Williams 1 (100-ac), David Hill sur, 3 mi ne Longview, elev 426 ft, Pecan chalk 2391-2985 ft, top Austin chalk 3447 ft, sd 3620 ft.

HENDERSON COUNTY—Great State Oil Corp.'s R. Sid Ansley 1-A, N. B. Thompson sur, elev 268 ft, top Austin chalk 2550 ft, dr 3200 ft. LaRue Bros. and Toddie L. Wynne's G. W. Forester 1 (114-ac), David Cherry sur, LaRue salt dome, rig. Taubert & McKee (was Crosby & Culp's) M. T. Dodd 1 (160-ac), Geo. Aldrich sur, 4 mi e of Malakoff, elev 376 ft, Pecan chalk 2390-2504 ft, Austin chalk 3456-3610 ft, fsh 4049 ft. H. M. Wilson et al's H. M. Wilson 1 (943-ac), Thomas Caro sur, 5 mi n of Malakoff, dk.

HOPKINS COUNTY—D. A. Hale et al's L. N. Hall 1 (70-ac), A. Caro sur, A-143, elev 506 ft, Pecan chalk 1825-2040 ft, top Austin chalk 2728 ft, sd 2950 ft.

HUNT COUNTY—D. T. Cauble et al's Y. B. Reed 1 (220-ac), F. Thweatt & C. B. Payne sur, 3 mi se Greenville, top Woodbnie 2809 ft, top Red Beds 2874 ft, sd 3338 ft. H. G. Samson and Shawver et al's J. R. Phillips 1 (53 1/3-ac), W. L. James sur, elev 522 ft, top Gober chalk 550 ft, top Austin chalk 1113 ft, sd 1615 ft.

KAUFMAN COUNTY—G. H. Germany et al's D. Clark-W. S. Kirby 1, S. Edens sur, sd 1780 ft. L. P. Kean et al's J. B. Hunter 1, R. Sowell sur, 4 mi s of Terrell, elev 453 ft, top Austin chalk 1785 ft, dr 3220 ft. Murray and Emerson's G. W. Martin 1 (100-ac), W. F. C. Butler sur, 2 mi ne of Kemp, sp and sd.

LIMESTONE COUNTY—C. F. Carter et al's S. E. Dean 1 (75-ac), Pedro Varella sur, 3½ mi sw of Mexia, sd 1717 ft. Dan H. Daugherty et al's Sallie Welch 1 (94-ac), Pedro Varella sur, Austin chalk 2350-2650 ft, top Woodbine 2890 ft, dr 2905 ft. J. Edward Mills et al's J. B. Hunt 1 (34¼-ac), Israel Woods sur, 3 mi ne of Kosse, Pecan chalk 2010-2137 ft, Austin chalk 2780-3158 ft, top Woodbine sand 3578 ft, cem 5 3/16-in cas, td 3637 ft.

MORRIS COUNTY—Marydun Oil & Gas Co.'s Sterling Oil and Refining Company's T. C. Conner 1 (1000-ac), M. W. Mathews sur, elev 294 ft, Pecan chalk 2345-2890 ft, dr 3750 ft, Steve J. Rotondi et al's W. & C. Smith 1 (50-ac), M. C. Vela sur, 2½ mi sw Naples, dk. Watson et al's P. M. Staggers 1, J. D. Nelson sur, co 4229 ft. B. L. Watson et al (was HNH Drlg. Co.'s) E. Hall 1 (177-ac), Levi Jordan sur, top Pecan chalk 2360 ft, co 4002 ft.

NAVARRO COUNTY—W. J. Keeling Estate and Peyton Bros.' J. F. Rushing 1 (84-ac), Henry Ford sur, 6 mi w of Currie, elev 530 ft, Austin chalk 2155-2395 ft, top Woodbine 2858 ft, sd 2880 ft. Wm. C. McGlothlin et al's M. A. Dobbin 1 (138-ac), E. Lowry sur, 2 mi n Corsicana, elev 443 ft, Austin chalk 1244-1701 ft, dry and abd 2135 ft. Wiggins et al's D. A. Donoho 1 (63½-ac), John Cauple sur, 2 mi sw Corsicana, elev 467 ft, sd 1439 ft.

RED RIVER COUNTY — C. M. "Dad" Joiner et al's D. Rust 1, C. C. Wilborn sur, s edge Avery, dk. J. E. Dinger Oil Co.'s W. T. Norris 1 (351-ac), Joseph Guest sur, 1 mi s of Detroit, elev 464 ft, Red Beds 1290-1413 ft, dr 1600 ft.

ROBERTSON COUNTY — H. L. Patton Co.'s W. H. & H. A. Ely 1 (616-ac), Antonio Manchaco sur, 5 mi se Hearne, elev 392 ft, top Carrizo 661 ft, dr 1150 ft.

RUSK COUNTY—Clark et al's J. T. Irwin-Hapgood 1, Geo. May sur, 5 mi ne of New Salem, lcn. Ben E. Lamb et al's Haywood Leath 1 (185-ac) L. J. Dooley sur, 2½ mi e of Pirtle, elev 370 ft, Pecan chalk 2418-2793 ft, Austin chalk 3352-3512 ft, dr lime 4810 ft.

SMITH COUNTY—W. L. Cloud and A. G. Deck's Dora Kendall 1, John Williams sur, 3 mi e of Van field, sd 1650 ft. Dr. Garland et al's J. W. Bartlett 1, R. G. Stewart sur A-955, 1 mi se Jamestown, elev 498 ft, dr 2815 ft. W. R. Harrison et al's W. P. Rushing 1, Jacob Herrin sur, 1½ mi se Whitehouse, elev 393 ft, pb from 4673 to 4330 ft and re-cem hole. Sun Oil Co.'s Longley & Reeves 1 (151.45-ac) J. Lindley sur, 4 mi ne Chapel Hill, elev 399 ft, Pecan chalk 2832-3242 ft, Austin chalk 3752-3905 ft, coring Woodbine section 3950 ft.

TITUS COUNTY—Steve Rotondi et al's O. C. Lillianstern 1 (40-ac), W. H. Crawford sur, 5 mi se of Talco, elev 301 ft, dk.

UPSHUR COUNTY—G. W. Berry et al's D. M. Hollins 1, B. Asher sur, lcn. Russell Tarr et al's J. C. Hall 1 (180-ac), Wm. McFadden sur, 1½ mi nw Kelsey, lcn.

VAN ZANDT COUNTY—J. C. Acree et al's F. W. Anderson 1 (160-ac), John Blair sur, 4 mi n of Wills Point, sd 2068 ft. Blackwell O&G Co.'s Mrs. C. H. Browning 1 (100-ac), J. P. Tackett sur, 2½ mi se Van, lcn. O'Byrne et al's J. D. Daniels 1 (115-ac), W. R. Flowers sur, 2¼ mi se Martin Mills, lcn. Monterey Oil Co.'s S. E. Cox 1 (67-ac), J. Wilson sur, 2 mi se Martin Mills, dr 2010 ft. Newt Tidwell and W. J. Rogers et al's L. E. Breucher 1 (98¾-ac), David Clapp sur, 5 mi se Wills Point, rog.

WOOD COUNTY—R. M. Coleman & Ed. S. Hill's J. J. Junior 1 (59-ac), Jas. M. Moore sur, 7 mi sw of Winnsboro, elev 479 ft, Pecan chalk 2612-2805 ft, Austin chalk 4131-4220 ft, dr 4350 ft.

BORDER COUNTIES

HARRISON COUNTY—Roy C. Swails et al's Bonnie Pitts 1, sec G. W. Martins sur, cemtd 10-in csg 120 ft, dr 140 ft. Hanover, Bergendall et al's Buchanan 1, W. M. McIlvain sur, sd after pumping 2 hours, td 3688 ft.

MARION COUNTY—Ed S. Holman's Lizzie Henderson A-1, R. Bennington sur, hole heaving, 6⅝ in csg cemtd 1919 ft, top PG after pb from 3407 ft to 2445 ft.

PANOLA COUNTY—J. L. Cadrin's Robt. Johnson 1, J. Johnson sur, dk. Harry Flinchbaugh and J. E. McAneny's M. G. McCormick 1, Jas. P. McAdams sur, rur. G. F. Hudson's J. F. Nail 1, C. McCrary sur, claim so in Ozan, sd for csg, td 2327 ft (SIM). Geo. Le Grand's P. J. Laidleigh 1, A. Thompson sur, sd 55 ft. S. B. Wallace 1, A. M. McLaughlin sur, rur.

SHELBY COUNTY—I. M. Bradley et al's J. J. Ashberry 2, J. M. Mitchell sur, top PG 2045 ft, cemtd 6⅝ csg 2960 ft, bailed dry 3070 ft, dr 3250 ft. O. P. Bush, Tr.'s Pickering Lbr. Co. 1, W. H. Harvey sur, sd 1535 ft.

SOUTH TEXAS

BANDERA COUNTY—Plateau Oil Co.'s R. G. Garrison 1, sec 506, GC&SF sur, dr 2850 ft.

BASTROP COUNTY — Hiriam Edwards' Murchison 1, A. Litton sur, dr below 2075 ft. Malone and Owens' S. S. Spooner 1, L. Leverenz sur, sd 60 ft. Marts & Beavens' W. L. Miller 1, blk 22, Dennis Dykes sur, dr 2796 ft. Nelson Puett's Carroll 4, A. Mayes sur, dr 913 ft.

BEE COUNTY—Mills Bennett & W. F. Morgan's Bassinger 1, ne nw sec 7, J. M. Uranga gr, ru. Daubert & Melville's Theo. M. Plummer 1, Theo. M. Plummer sub, nw part of county, making lcn. Dirks Bros.' George A. Ray 1, 990 ft nl, 150 ft wl 80-ac lease, W. B. Blanchard sur, sw of W. Tuleta field, dr 2220 ft. Felmont Corp.'s J. T. Earnest 1, Bee County School Land sur No. 17, dr 3150 ft. A. Hartzendorf's Fee 1, G. A. Kerr sur, sand 3633-48 ft, dr out plugs. Humble O&R Co.'s Laura Thompson 2, Garrett Roche sur, ds stuck 5405 ft, heavy gas pressure encountered 5354 ft. Inter Allied Pet. Corp.'s L. L. Nix 1, C blk 6, J. M. Uranga gr, nw sec 20, sw outpost well, West Tuleta, sp. Paul Meaders et al's Keller, Alcorte sur, sec No. 28, dk. Tother Oil Co.'s J. T. Hudman 1, C. Baker sur, elev 444 ft, sand 3112-17 ft, set csg without dst. Worth Oil Co.'s Rutledge 1a, B. Q. Hadley sur, sand 3386-94 ft (SLM) run csg, woc. Wrightsman Oil Co.'s A. J. Kimball 1, Winship sur, dr 395 ft.

BEXAR COUNTY—N. G. Carter's Bilhartz 1, F. Rolen sur No. 48, dr 750 ft. Dorine Oil Co.'s S. Tudyk 1, F. Cardinas sur, dr 1500 ft. M. A. Frederich's Fee 1, Recardo sur, dr 1400 ft. Keiffer & Jones' E. W. LaGrange 1, F. Rolen sur, sd 1005 ft. C. J. LeComte's Mayfield 1, Park 1, re-dr 362 ft. McPhee & Briggs' Florence Lamb 1, M. de Luna sur, dr 1400 ft. Noble & Aiken's R. W. DeVilbliss 1, Martinez sur, sd 2230 ft. George O'Neill et al's Holly Crouch 1, M. Gotari sur, testing 1396 ft. Carroll C. Raborn's Claud McCauley 1, Wm. Harris sur No. 52, set sur csg 40 ft, sd. Ross Bros.' Thurman Barrett 1, near Palo Alto road,

sd 600 ft. O. B. White's Chapman 1, sd 168 ft, change from spudder to rotary. E. Weilbacher et al's A. Ernst 3, John Christopher sur, lcn.

CALDWELL COUNTY—H. H. Coffield's C. C. Franks 1, E. Brown sur, dr 800 ft. Exploration Dev. Co.'s (F. Meyers) W. T. Mooney 1, S. Seal sur, sd 290 ft for ds. Trail et al's A. B. Tiller 1, G. Hinds sur, set csg 2367 ft, wocs. R. Y. Walker's J. M. Pierce 1-B, S. Seal sur, td 2556 ft, put on pump after pb 2348 ft.

CALHOUN COUNTY—Continental Oil Co.'s Am. National Realty Co. 2, sec 6, blk C, P. Garcia sur, sp.

DE WITT COUNTY—Stewart Egan Oil Co.'s R. Kleberg 1, J. J. Tumlinson sur, re-dr 20 ft. Sunray Oil Co. et al's W. W. Buehring 1, sec 7, T&NO sur, sd 2014 ft.

DUVAL COUNTY—Al Buchanan & Blanco Oil Co.'s G. Ruiz Est. 1, sec 73, completing 2716 ft, sand 2711-16 ft. Conway & Buescher's A. H. Hoffman 2, sec 116, sp. Harvey & Henderson's Chernoskey 1, sur 226, swabbed sw and oil 2220-34 ft, apparently casing seat gave way, to dd 2650 ft and pb 2234 ft if prod not obtained. Intrepit Oil Co.'s Parr Ranch 2, sec 115, w Parr 1, mir. Magnolia Pet. Co.'s Bennett 1, sec 441, mim. G. G. Mortimer's Peters Ranch 2-B, sec 196, dr 1100 ft. W. L. Pearson et al's Fitzsimmons 1, sec 291, testing 4425 ft in sd tr hole, last report. Santa Clara Oil Co.'s Wood Welder 1, sec 385, lcn. Smith, Hamil & Ogden's G. Ruiz Est. (Parr) 1, sec 41, cored Loma Novio sand, making dst. Tex-La Oil Corp.'s Hubbard 1, sec 84, sd 600 ft, dr water well.

FRIO COUNTY — Amerada Pet. Corp.'s Davie & Burke 1, B. L. Crouch sur, dr 3350 ft.

GONZALES COUNTY—Southwestern Dev. Synd., Ltd.'s W. S. Atkinson 1, S. Y. Reims, dr 4675 ft.

GUADALUPE COUNTY — A. D. Locke's Mrs. N. S. Lowman 1, Cyrus Campbell's League, dr 1810 ft. Mineral Corporation's of Texas' Allen Phillips 1, 162 ft nl, 900 ft el of 124.6-ac tr, Cortinez sur, 10 mi sw Seguin, lcn. Siedeman's Fee 1, Esnaurrizar sur, sd 2340 ft. Suttle et al's Baenzinger 1, O. A. Manchola sur, td 2155 ft, sd. L. E. Trout et al's M. McKee 1, Green DeWitt sur, fsh 3090 ft.

HIDALGO COUNTY — D. D. Oil Co.'s Brock & Showers 1, lot 8, blk 9, Vista Hermosa sub, por 80, dr 5565 ft. D. D. Oil Co. & K. D. Harrison's Mrs. Lula George 1, tr 13, por 41, 1000 ft e of Samfordyce field, gas sand 2730-45 ft, shale 2745-48 ft, oil sand 2748-56 ft, set 7-in csg 2753 ft, wocs. DMC Oil Co.'s Daskam 1, blk 43, por 45, dr 3520 ft. E. H. East, Tr.'s F. M. Carter 1, blk 19, Retama sub, Del Tule gr, coring 1300 ft. Earl C. Hankamer et al's Frank Rabb 1, Laguna Seca League, dr 3840 ft. E. A. Showers et al's Brock & Showers 1, lot 11, blk 18, por 79, dr 5578 ft. E. L. Smith Oil Co.'s G. G. Salinas et al 1, 1001 ft wl, 548 ft nl of share 10, por 41, mile ne Samfordyce field, sp. Union Sulphur Co.'s Am. Rio Grande Land & Irrig. Co. 3, Llano Grande gr, lot 2082, blk 86, N. Capisallo Dist, sand 7477-93 ft, cleaning, flow about 25 bbls fluid per hr, 30 percent oil, rest dr mud, little sw, ¼-in choke on tubing, tp 2200 lbs, cp 2450 lbs.

JACKSON COUNTY—Shell Pet. Corp.'s McCrory 1, sec 15, Morris & Cummings sur, sand 5213-30 ft, dst 1600 ft, sw 10 min.

JIM HOGG COUNTY — French Oil Co.'s Pena 1, blks 41-42, White sub, share 2, El Peyote gr, sur 574, dr 1950 ft. Miller et al's Yeager 1, blk 6, sur No. 20, dr 2975 ft.

JIM WELLS COUNTY—O. W. Killam's W. D. Wade 5, 1250 ft sw No. 4, blk D, S. A. Agua Dulce sur, mir.

KARNES COUNTY—Harvey & Henderson's Paul Jauer 1, Borscheimer sur, dr 350 ft. Luling O&G Co.'s W. W. Boyce 1, S. D. Still sur, dk. H. A. Pagenkopf's McAda 1, Carloa Martinez sur, dr 3200 ft.

KERR COUNTY—Jeff Love & Eastland Oil Co.'s Jeff Love 5-E, sec 1594, J. Martinez sur, re-dr 4725 ft.

LA SALLE COUNTY—C. W. Beck's Rancho Feliz 1, sec 47, sd 1800 ft.

LAVACA COUNTY—L. A. Douglas' Fehrenkamp 1, M. Mitchell sur, sp.

LIVE OAK COUNTY—Baugh & McMillan's Walton & Campbell 1, D. R. Fant sur, sd 3214 ft. Henderson Coquat's Sartain 1, sec 43, Simmons sub, sand 1356-60 ft, well blew out, ran wild 24 hrs, controlled, dd; Rex 1, GH&H sur, dr 1000 ft. Neversuch Oil Co.'s H. H. Ueckert 1, 330 ft sl and wl of 320-ac tr in blk 121, lcn. L. D. Ormsby's Etta Terrell 1, Elizabeth Jurdin sur, dr 1400 ft. Rowan & Hope, Inc.'s L. R. George 1, John Ely sur, dr 4160 ft. J. O. Whittington et al's Little 1, M. M. Shipp sur, td 5758 ft, pb and set csg atop Pettus sand 4987 ft, former report in error.

McMULLEN COUNTY—Henderson Coquat's Ezzell 1, 2000 ft sel and midway between nel and swl of D. R. Fant sur, lcn. Howeth & Sziger's Rhodes Ranch 1, M. F. Lowe sur, sec 22, dr 1300 ft.

MEDINA COUNTY—Lynd & Hepler's Mary Ann Jungman 1, N. B. Rogers sur No. 33, fsg 1500 ft for ds.

MILAM COUNTY — C. F. Drake et al's Standard Coal Co. 1, G. L. Johnson sur, sd 1569 ft. Second National Oil Co.'s B. P. Ward 2, L. Taylor sur, dr 850 ft.

NUECES COUNTY—A. F. Holliday's Stillwell 2, blk 31, Sheppard Farm lots, re-dr 996 ft. J. K. Sutton et al's J. Sagarin 3, CEPI&M sur, dr 4000 ft. Texon Oil & Royalty Co.'s Buckholtz 1, J. Ward sur, dr 3150 ft.

REAL COUNTY—H. J. Heartwell et al's L. J. Haby 2, AB&M sur No. 175, sd 2840 ft.

REFUGIO COUNTY—Humble O&R Co.'s Mrs. M. M. Marberry 1, J. Dunn sur, dr 3060 ft. Magnolia Pet. Co.'s Mattie Wood 1, S. Turner sur, dr 5602 ft. Quintana Pet. Corp.'s Tom O'Connor 2-B, M. L. White sur, dr 9923 ft.

SAN PATRICIO COUNTY—Humble O&R Co.'s Welder 1, lot 4, A & O sub, Villareal gr, dr 6700 ft. A. E. Masterson et al's W. A. Wurzbach 1, C. C. Hornsby 1, dr 4200 ft. Plymouth Oil Co.'s Welder 3-A, J. M. Portillo sur, dr 4780 ft; Welder 1-C, sec 49, sand 5500-4, ft, dst 5490-5504 ft, dst showed 450 ft 32 gr plo, 25 lbs ¼ ch bottom, ½ ch top, 10 min, wait on orders.

STARR COUNTY—C. R. Borah et al's A. Guerra 1, share 6, San Jose gr, dr 2790 ft. John Clopton's Roos 1, por 92, coring 4610 ft; D. L. Tijerina 1, Sh 14-C, por 80, blk 14, dr 1820 ft. Conroe Dr. Co.'s Guerra 1, blk 35, J. N. Crawford sub, por 56, dr 1400 ft in sd tr hole. R. G. Hall's Doyno Chatfield 1, 150 ft s of center of nl of blk 13-C, tr 21, por 80, sw Rio Grande City, dk, mir. Hughston Oil Co.'s Wood-Gregg 1, 1582 ft n of MP Ry and 162 ft w of por 84, Anc Juriz of Carmargo, mir, 6500 ft contract. W. F. Lacy et al's G. M. Abney 1, por 99, fsh for slip 2840 ft. Merren, Johnson & Bond's SCCC 4, blk 24, J. L. sub por 89, td 4213 ft, swabbing in sd tr hole 2841 ft. Mitchell et al's R. G. Calinas 1, sh 39, por 80, sd 1080 ft. Hiriam Reed's Block Bros. 1, tr 28, por 80, 2000 ft w and slightly n of Rio Grande City field, sp. Sunray Oil Co.'s Munoz 1, por 75, ru.

VICTORIA COUNTY — Moore & Ahern's Henderson & Pickering 1, W. Rupley sur, sand 6005-18 ft, dst 400 ft plo 12 min, ¼ ch top and bottom, set csg, wocs. Shell Pet. Corp.'s A. M. McFaddin 1, 5000 ft e rr and 600 ft n of lease in J. Varin sur, prep to sp. The Texas Co.'s A. M. McFaddin 9, J. M. Rine sur, dr 750 ft.

WEBB COUNTY — Carolina-Texas O&G Trust's Benavides 11, ne sec 683, dr 4400 ft; Barnhart 1, sec 262, de la Garza sur, testing 2405 ft. Gates Ranch Oil Co.'s Gates 7, sur 62, sp and sd. O. W. Killam's A. M. Bruni Est. 32, blk 28, sur 8, Arispe gr, td 3446 ft, pb and test 2995 ft (well on sw side of Bruni townsite area). Payne et al's Hoggterp 1, blk 6, sec 1110, coring 1520 ft. Arthur H. Wray's Geo. Stumpke 1, sh 1, Brewster Pasture, Joahquin Galan gr, dr 650 ft.

WILLACY COUNTY — South Texas Dev. Co.'s Francisco Armendiez 1-A, 280 ft nl, 7350 ft wl of Little Share 4, 2606-ac tr, 50 ft n No. 1, ru.

WILLIAMSON COUNTY—Gault & Mims' H. V. Seggern 1, John Bevil sur No. 56, sd 900 ft.

WILSON COUNTY—Universal Oil Co.'s O. F. Burney 1, 330 ft sel and nel of 53-ac tr, Arocha sur, in edge of Floresville, set 200 ft sur csg, wocs.

ZAPATA COUNTY—Danvers & Harrison's N. J. Vela, blk 7, Vela sub, por 29, sd 2265 ft. E. L. Smith Oil Co.'s R. Hinnant 1, 330 ft nl and wl blk 27, sur 307, lcn. Vollmering et al's A. M. Bruni 2, Barrocito Pasture, Borrego gr, dr 350 ft.

TEXAS GULF COAST

ANGELINA COUNTY—Coston & Howard's Penn 1, 8 mi w of Lufkin, J. Watson sur, spudded and sd. Leetex Oil Co.'s A. H. Geisler 1, 1 mi nw of Lay, B. J. Thompson sur, spudded. Koch & Duffey's L. W. Alberry 1, near Diboll, J. A. Prado sur, standing 2020 ft. E. B. La Rue's W. D. Ivey 1, near Huntington, Scarborough sur, no report. Pioneer Exploration Co.'s S. L. & B. L. Huffman 1, 6 mi ne of Lufkin, S. Donegan sur, ru.

AUSTIN COUNTY — Arkansas Fuel Co.'s Otto Huedner 1, 5 mi e of New Ulm, Renke Stolze sur, dr shale 3140 ft. John C. Crossman et al's Corp. of San Felipe 1, 4½ mi e of Sealy, San Felipe de Austin 5 League, dk.

BRAZORIA COUNTY — The Texas Co.'s Freeport Sulphur Co. 1, 2500 ft e of Canal, nwc of S. F. Austin sur, in Areola sur, dr shale 2910 ft.

GALVESTON COUNTY—Texas Gulf Co.'s Shaw 1, E. Hall & L. Jones sur, dr shale 7325 ft.

GRIMES COUNTY—Russ Pet. Co.'s Gibbs 1, 3 mi ne of Singleton, H. Hays sur, abd 3500 ft.

HARRIS COUNTY — Hill & Hill's C. R. Wharton 1, 2½ mi w of Fairbanks, W. C. R. R. sur, sec 5, abd 7205 ft. Johnson & Johnson's Fee Land 1, s Houston, H. T. & B. sur, dr shale 3402 ft. W. U. Paul's House 1, 100 ft n of House 1, M. Magruda sur, wocs at 7760 ft. T. S. & F. Oil Co.'s J. B. Hines 1, 1½ mi sw of Lynchburg, A. McCormick sur, sd 3524 ft. West Prod. Co.'s O. P. Woodburn 1, Genoa, A. Whitlock sur, ru.

JASPER COUNTY — Republic Prod. Co.'s Sabine Tram Co. 1, ne of Buna, H. & T. C. sur, sec 71, dr shale 6208 ft.

LIBERTY COUNTY—Jack Frazier's Lynott Buffon 1, n of Hardin, J. Robeson sur, fsh 7380 ft; Lynott Buffon 2, 7500 ft e of Buffon 1, J. Robeson sur, lcn. Liberty Independent Oil Co.'s J. M. Neal 1, S. Strong sur, dr shale 4015 ft.

MATAGORDA COUNTY—H. M. Smith's Wadsworth 1, Mad Island prospect, S. R. Fisher sur, dr shale 5785 ft.

MONTGOMERY COUNTY—W. C. Keeble's T. S. Foster 1, J. M. De La Garza sur, 3825 ft.

ORANGE COUNTY—T. S. Ruff's Kaulback 1, 4 mi e of Beaumont, J. Armstrong sur, dr gumbo 2040 ft, abd 5320 ft.

POLK COUNTY—Smith & Thompson et al's E. Haynes 1, e of Leggett, J. Whitmore sur, abd 4045 ft. Kirby Pet. Co.'s Kirby Lbr. Co. 1, T. F. Pinckney sur, abd 5320 ft.

WHARTON COUNTY—The Texas Co.'s Pierce Estate 1, se of Pierce, I. & G. N. sur, sec 38, dr shale 6310 ft. S. E. Grey's C. Weinzell 1, se of Riverside, J. J. Porter sur, dr shale 3360 ft.

LOUISIANA COAST

ACADIA PARISH—Humble's Rice Milling Co. 1, s of Crowley, sec 27-10s-2e, washing over 4 in dr pipe 8429 ft. Woodley Pet. Co.'s Dr. Newman 1, Churchpoint, sec 24-7s-1e, abd 8066 ft.

AVOYELLES PARISH—Southern Star Pet. Co.'s I. G. Boyette 1, sec 28-3n-5e, dr shale 3690 ft.

BEAUREGARD PARISH—C. K. Drlg. Co.'s Long Bell Lbr. Co. 1, 6 mi w of Ludington, sec 26-2s-8w, stuck drill stem 730 ft.

CALCASIEU PARISH — Fred Oil Co.'s Faist 1, sec 26-8s-10w, to set surface csg 714 ft.

IBERIA PARISH—Texas' State Lake Fausse Point 1, on s flank of dome, sec 35-11s-8e, dr shale 1335 ft.

JEFFERSON PARISH—Lincoln Oil Co.'s Rigaud 1, Grand Island, sec 28-21s-25e, dr shale 6805 ft. Texas Co.'s Bayou St. Denis 1, 6 mi se of Lafiitte, sec 19-17s-24e, dr shale 8866 ft.

JEFFERSON DAVIS PARISH—Strake Oil Corp.'s Calcasieu National Bank 1, 3 mi sw of Woodlawn, sec 12-9s-6w, abd 8148 ft.

ST. MARTIN PARISH—Texas' State Blum Bob 1, 3 mi ne of Henderson, sec 9-8s-7e, dr shale 6452 ft.

ST. MARY PARISH—Edwards Drlg. Co.'s Chetemaches 1, near Charenton, sec 34-13s-9e, sand 8500 ft.

TANIPAHOA PARISH—R. A. Conklin's Lake Superior Piling Co. 1, sec 19-5s-9e, dr sand 3098 ft.

NORTH LOUISIANA

BIENVILLE PARISH—Saline Drilling Co.'s Pardee 1, ne ne 17-14n-6w, sd 3819 ft sandy shale.

BOSSIER PARISH—W. A. Kirklin, Tr.'s Garrett & McKellar 1, se nw nw 3-21n-13w, sd 1520 ft. Plain Dealing Synd.'s S. H. Bolinger Lbr. Co. A-1, sw se nw 31-23n-13w, rur. Richplain Oil Co.'s Gains 1, nw nw 22-22n-13w, rur. Scott & Howard's Sherrill 1, nw sw 13-18n-12w, ru and sd. L. R. Skidmore's Davis 1, se se 12-18n-13w, sd 1250 ft.

CADDO PARISH—Ed Bailey et al's Hartzo 1, ne nw 28-22n-15w, sd 1230 ft. W. T. Bell et al's Bostick 1, sw sw 12-22n-16w, bailed dry so 2754 ft, blg to test at 2780 ft. Simplex Oil Co.'s Keith 1, nw se 18-20n-14w, dk. Texas Trading Co.'s J. B. Waskom 1, se nw 29-19n-16w, spd 8-in csg 21 ft, dr 275 ft.

CATAHOULA PARISH—J. Phillipi et al's La. Cent. Lbr. Co. A-1, 127 ft n and 2490 ft w sec 2-9n-6e, spd.

CLAIBORNE PARISH—K. C. Bundy's J. K. King 1, 12-21n-7w, dk. J. C. King et al's Odis Webb 1, nw ne 21-21n-8w, sd 1899 ft sandy shale. E. T. Oakes et al's Patton Est. 1, ne ne 1-20n-5w, rur.

DE SOTO PARISH—E. B. Bird et al's A. D. Johns, Jr. 1, se nw 20-14n-16w, elev 290 ft, top Nacatosh 1229 ft, top Saratoga 1410 ft, base Annona chalk 1930 ft, claim so 1930 ft, top Blossom 2105 ft, dr 2135 ft. Century Oil & Drlg. Corp.'s J. M. Norton 1, sw se gauged 8½ mil ft gas and show sw, si, td 2825 ft. Flesh & Hootkins' J. S. Farmer 1, nw se ne 14-12n-14w, rur. E. L. Foster et al's Youngblood 1, ne ne 9-11n-14w, sd 2690 ft. P. G. Frailey et al's J. E. Stell 1, 5-12n-16w, rur. J. T. McCormick et al's Harris 1, sw se 11-12n-16w, mim. Ramsey-DeSoto Oil Co.'s Ramsey 1, se nw 36-11n-11w, sd 210 ft.

EAST CARROLL PARISH—Century Oil & Drlg. Corp.'s Olivedell Pltg. Co. 1, 56-21n-12e, sd 300 ft, repr dk blown down by storm.

MADISON PARISH—Frazier et al's Frazier 1, nw se se 23-17n-10e, dr 2475 ft. Southern Land & Expl. Co.'s Deltic Inv. Co. 1, nw nw 1-17n-12e, lcn.

MOREHOUSE PARISH—Alex Rice, Tr.'s Meyers 1, nw se nw 15-22n-7e, dk.

NATCHITOCHES PARISH—Clyde Creighton's Friedman Est. 1, swc 52-7n-6w, sd 2935 ft. Edwards & Turner's Prudential Life Ins. Co. 1, nw nw 26-10n-6w, dk. Leslie Prod. Co.'s Tom Moffitt 1, se nw 19-10n-10w, lcn. Missouri Drilling Co.'s Brown Lbr. Co. 1, se se 5-10n-10w, co td 1033 ft. B. E. Taylor's DeBlieux 1, nwc 83-10n-7w, rur.

RAPIDES PARISH — Luther C. Terrell's Chas. Armstrong 1, se se 24-5n-1w, dr 2050 ft.

RED RIVER PARISH—Sterling O&G Co.'s Long-Bell Lbr. Co. 1, se ne se 19-13n-9w, sd to lay water line, td 2828 ft.

SABINE PARISH—M. T. Hines' J. B. Hill 1, sw ne 4-6n-11w, dr 1475 ft. Laurel Pet. Co.'s Long-Bell Lbr. Co. 1, sw sw 14-8n-14w, wocs 10-in csg 56 ft. Whitehurst et al's Logan Oil Co. 1, nw ne nw 3-9n-13w, used acid, td 1956 ft.

WEBSTER PARISH—Virgil Likens' E. L. Stewart 1, nw nw 25-18n-10w, dr 1425 ft.

ARKANSAS

ASHLEY COUNTY—Glen E. McFadin et al's Bovine Farms 1, ne ne 1-18-8w, elev 178 ft, cored Nacatosh sand 2767-80 ft, no show, fsg, td 2798 ft shale.

COLUMBIA COUNTY — Southern States Gas Co.'s Pine Woods Lbr. Co. 1, sw ne nw 10-20-22, sd 200 ft.

HEMPSTEAD COUNTY—F. W. Martin et al's A. J. Lafferty 2, se nw 17-14-24, rur.

LA FAYETTE COUNTY—W. H. Harvey's A. M. Allen 2, se sw 18-19-24, cemtd 6⅝ in csg 2780 ft, bailing, td 2782 ft; R. F. Allen 1, ne se sw 13-19-25, dk. S. H. Riggs et al's Jas. Dubose 1, se nw 35-15-24, sr, td 2390 ft. Transportation Pet. Co.'s Red River Lbr. Co. 1, sw sw 26-19-25, elev 250 ft, top Nacatosh 1804 ft, top Blossom 2740 ft, dr 3061 ft.

LONOKE COUNTY—J. C. Strahan's Hardin 1, nw nw 18-2s-7w, fsg, td 2323 ft.

MILLER COUNTY—C. J. Hodges et al's Commercial Nat. Bank 1, sw ne se 30-17-28, dk. King Oil Corp.'s E. G. Anderson 1, nw sw ne 16-14-27, dr 2025 ft. Lee Timberlake's Frost Lbr. Co. 1, sw sw se 27-15-26, dr 2940 ft.

NEVADA COUNTY—Garnett et al's Floyd Munn 1, 16-14-22, sd 50 ft.

OUACHITA COUNTY—S. J. Carnes' P. Highsmith 1, nw ne nw 25-13-18, lcn abnd. Kraft Oil Corp.'s Rath & Cartier 1, sw sw sw 32-13-17, sd 1853 ft. Chas. Steel et al's H. W. Meyer Est. 1, se sw se 16-13-18, rur.

SEVIER COUNTY—Pendleton & Vaughan's Harris Est. 1, 34-9-30, arr to deepen with CT, td 1320 ft.

UNION COUNTY—Gulf Ref. Co.'s Werner Lbr. Co. 49, sw nw sw 5-16-16, 10-in csg 2293 ft, dr 4085 ft (8000-ft test). H. L. Hunt, Inc.'s E. F. Gregory 15, 10-17-14, elev 180.4 ft, 7-in csg 5834 ft, base red beds 5937 ft, arr set liner and test, after so, td 6535 ft. Big Lime (Permian) Joe Modisett et al's D. G. Sturdivant 1, se se 6-18-13, sd 4016 ft sandy lime. E. O. Olds' Telford 1, nw nw 35-17-15, wosr, td 2211 ft. Reuter Oil Co., Inc.'s Kinard 1, nw se nw 32-18-14, co td 2196 ft; Vines 2, nw sw se 29-18-14, wosr, td 2216 ft Urbana-Union Oil Co.'s Union Sawmill 1, nw sw 34-17-15, 10-in csg 150 ft, dr 2020 ft.

MISSISSIPPI

BOLIVAR COUNTY—White & Jones' Ballou 1, sw ne ne 18-24n-7w, dr 210 ft.

CLARKE COUNTY—L. Beckwith et al's Long-Bell Lbr. Co. 1, sw se 10-2n-16e, elev 378 ft, rur.

JONES COUNTY—Snow-Black Pet. Co.'s Fox 1, se se sw 30-7n-12w, dr 3025 ft.

LAUDERDALE COUNTY — Dalton Dev. Co.'s Bounds 1, nw ne se 3-6n-15e, dr 1485 ft.

MONROE COUNTY—P. J. McAlpine et al's Crook 1, ne ne 4-13s-18w, elev 413.6 ft, dr 2275 ft lime.

MONTGOMERY COUNTY—D. C. Shaffer et al's Fee not given, 31-19-7w, lcn.

RANKIN COUNTY — Cleve Love et al's Boehle 1, nw ne 18-5n-2e, rur.

STONE COUNTY—Gulf Ref. Co.'s Dantzler Lbr. Co. 7, se se 36-3s-11w, elev 170 ft, sdtr junk, td 5475 ft.

WARREN COUNTY—Harry W. Elliott's R. L. Parker 2, nw nw 14-14n-1e, elev 80 ft, dr plug in 4½ in csg cemtd at 1600 ft, tested sg, sd high water, td 1602 ft.

WINSTON COUNTY—Jack Vale's Moody 1, nw sw 3-13n-14e, elev 540 ft, top Midway chalk 857 ft, arr deepen, td 864 ft chalk.

ALABAMA

COVINGTON COUNTY — Geometer Prod. Co.'s A. B. Culbreth 1, sw sw ne 8-2n-14e, arr core 3880 ft.

HOUSTON COUNTY — Rice O&G Co.'s Oakley Est. 1, sw nw sw 9-3n-29e, co td 2506 ft.

LAMAR COUNTY — DeSoto O&G Co.'s Gardner 1, nw nw 22-15-16, elev 503 ft, repr rig to deepen, td 4182 ft.

PIKE COUNTY—Ala. Drilling Co.'s Faulk 1, nw nw 31-11n-21e, ru and sd.

FLORIDA

HILLSBOROUGH COUNTY—Southern Pet. Co.'s Mizell & Williams 1, 4-32s-21e, elev 120 ft, installing new engine, 6⅝ in csg at lcn, td 2100 ft.

LAKE COUNTY—Oil Dev. Co. of Fla.'s Gulf Expl. Co. 1, se se 17-24s-25e, elev 110 ft, sr to re-land 12-in csg due to fresh water flow in Ocala lime, td 455 ft.

MICHIGAN

MIDLAND COUNTY — Goll-Graves-Mechling's Oviatt 1, 16n-2e-24, dr 1300 ft. Foster & Wicklund's Neal 1, 16n-2w-13, dr 4047 ft. Howard Patterson's Haskins 1, 13n-2e-26, sd 3739 ft.

ISABELLA COUNTY — McClanahan Oil Co.'s MacRae 1, 15n-3w, ne ne ne-13, lcn. United Driller's Vandercook 1, 15n-3w-24, rig. W. J. Bernier's Webber 1, 15n-5w-22, dr 410 ft.

MONTCALM COUNTY — L. E. Duval's Eicknorch 1, 11n-10w,13, sd 1343 ft. Golden Oil Co.'s Steffensen 1, 10n-8w-5, dr 3160 ft. L. G. Thompson's Knapp 1, 12n-9w-17, dr 390 ft. T. F. Caldwell's Robinson 1, 10n-5w, ne ne ne-2, lcn. Fred Turner et al's McConkie 1, 10n-5w, ne s½ sw-10, lcn. Virgil Kirkham's Culy 1, 10n-5w, nw sw nw-23, lcn. Pure Oil Co.'s Bennett 1, 10n-5w, nw nw nw-12.

GRATIOT COUNTY—C. R. Gallagher's Atkin 1, 10n-4w, se se ne-17, mim. Mammoth Petroleum Corp.'s Dr. Graham 1, 11n-4w, sw se sw-31, lcn. Newark Oil and Gas Co.'s Beck 1, 10n-3w-29, lcn.

GLADWIN COUNTY—M. F. Whitehill's Spicer 1, 17n-2w-11, dr 1600 ft. Sun Oil Co.'s Hines 1, 17n-1w-31, dr 2800 ft. Beaverton Oil and Gas Co.'s Ross 1, 17n1w-7, dr 1400 ft.

MISCELLANEOUS—ARENAC COUNTY: McClanahan Oil Co.'s Heath 1, 19n-3e-31, dr 3120 ft. CLINTON COUNTY: Elba-Duplain Oil Co.'s Stratton 1, 8n-1w-4, dr 2600 ft. CLARE COUNTY: Sun Oil Co.'s Becker 1, 18n-3w-2, dr 400 ft. ROSCOMMON COUNTY: Black Diamond Oil Co.'s Vaughan 1, 24n-4w-28, sd 3335 ft, so&w.. LIVINGSTON COUNTY: Talbot Oil Co.'s McPherson 1, 3n-4e-35, sd 3950 ft.

Poland's Greatest Trouble Not Production Decline

Petroleum Engineer Zygmunt Saryusz Bielski, professor at the Gorniczej Academy, writes that, despite the fact that Polish production has continued to decline until only 4,000,000 barrels were produced in 1934, the output is still greater than the consumption of the country.

About 40 percent of products refined in Poland had to be exported last year at world prices, causing a loss to the Polish oil industry, according to Professor Bielski's letter.

"Actually the decline of production is not Poland's weak point, nor is it the dominant trouble with the Polish oil industry. The great difficulty is the high cost of production caused by the very difficult situations in the oil bearing strata." Professor Bielski's letter follows:

"The greatest drawback consists in the low pressure in the strata, customary in Polish oil fields, and even in the new fields practically all of the oil must be drawn to the surface artificially.

"Lifting methods employed in Poland are inefficient and extremely costly and, as indicated by swabbing, extremely harmful to the strata.

"A few years ago it was recognized that that situation was not satisfactory, and since that time more modern methods of production have been put into use in some of the areas. Repressuring is giving good results in some areas. In other areas the air and gas lift, in its various arrangements, is giving good service. Mining authorities are trying to suppress swabbing.

"Many young engineers are studying subsurface conditions and trying out new methods of production. There is no doubt that as a result of the researches of these young engineers production costs in Poland will fall.

"Pioneer Oil Company is pioneering in geological and geophysical research and survey work in Poland, having recently introduced the American reflection method."

NEWS *from the Industry's* EQUIPMENT MAKERS

Eagle Picher Sales Makes Series of Personnel Transfers

A series of transfers by Eagle Picher Sales Company places H. R. Shidel, formerly district manager of the Kansas City office, in the insulation division at Cincinnati, and Marvin A. Smith, formerly in the Tulsa office, is now Dallas manager of the insulation division with offices at 2215 Laws Street. Shidel is succeeded by S. C. Craft and Smith by Edgar T. Jackson. Kraft and Jackson are new men with the organization.

The Medart Company Appoints New Kansas Distributor

The Medart Company, St. Louis, announces the appointment of White Star Company, Wichita, Kansas, as distributor for The Medart line of transmission equipment in that area.

Ray L. Howes Joins Worthington As Eastern Oil Power Manager

As a result of increased activity in its Diesel and gas engine lines, Worthington Pump and Machinery Corporation has created the Eastern Oil Power Division under the field management of Ray L. Howes. His headquarters are at 2 Park Avenue, New York City. For the past 22 years, Mr. Howes has been connected with the Diesel sale division of Fairbanks-Morse Company at St. Louis and Chicago.

Eastman Oil Tool Company Organized by H. John Eastman

H. John Eastman recently has incorporated a new company to be known as Eastman Oil Tool Company. A new modern plant has been built at 2901 American Avenue, Long Beach, California, for the manufacture of deflecting tools and bits and regular bits. These tools are rented direct to oil operators or furnished in connection with the services of Eastman Oil Well Survey Company.

Officials of this company are oil men of many years experience. H. John Eastman, the president, is known for his controlled directional drilling work. R. E. Wiley, first vice president and general manager, has been head of the bit department of Eastman Survey Company. J. W. Hughes, second vice president and sales manager, formerly was employed by Oil Tool Exchange. Wm. C. Greene, secretary-treasurer and business manager, has had business experience in China and the Hawiian Islands and at one time was an efficiency expert for Westinghouse Electric & Manufacturing Company.

Larkin Packer Company Celebrating 30th Anniversary

Larker Packing Company is, on April 16, celebrating its 30th anniversary.

Its president, J. J. Larkin, had worked for some time as superintendent in his father's shop which is still in existence, known as Larkin & Company of Butler, Pa.

At its inception, April 16, 1905, Larkin Packer Company was known as Larkin Brothers, the two brothers, John and Frank, operating together until 1909 when the entire company was sold to the present president, John Larkin. The company began its operations in Bartlesville, Oklahoma, as the first exclusive oil field equipment manufacturing plant in the Mid-Continent. Practically all other shops at that time were repair shops, but it was Larkin's idea to be a manufacturer of high grade oil field equipment and this ideal has never changed throughout the thirty years of business. Starting purely as a manufacturer of packers, he began in 1913 to branch out into other items such as clamps and casing shoes, and it is interesting to note here that Larkin casing shoes and clamps are considered standard equipment on most major operators' lists of equipment.

In 1915 the name of the company was changed from Larkin Brothers to Larkin Packer Company, which name it has retained until now, even though packers are a very minor part of their business, packers having been replaced in many instances by the cementing of wells.

In November of 1920 Larkin Packer Company moved its general office and main plant from Bartlesville to St. Louis, Missouri, where it now carries on its business. They have maintained a warehouse in Tulsa since January of 1921 and have, within the last five years, expanded their branch offices to include Houston and Kilgore, Texas, and carry a small emergency stock of material in Odessa.

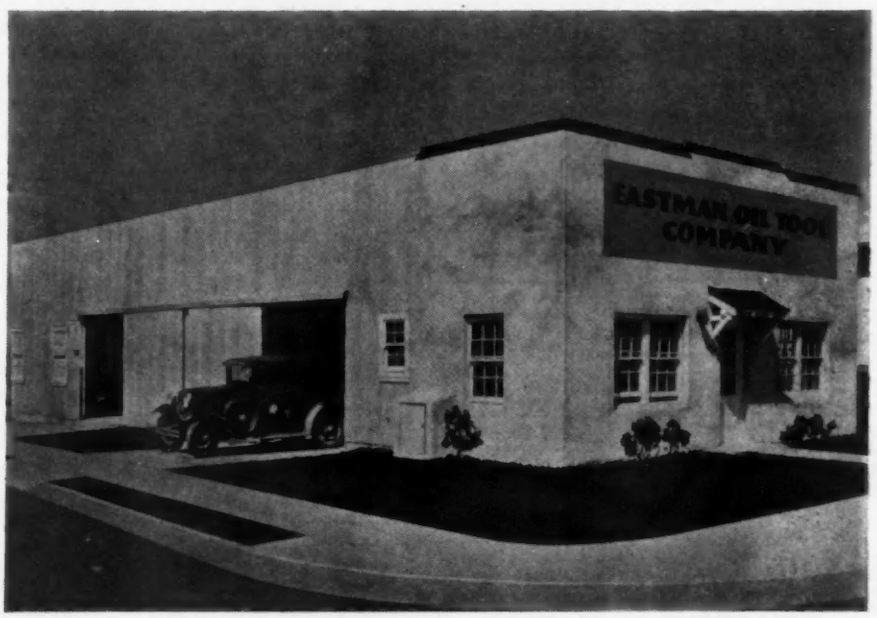
In July, 1929, the company was changed from a private ownership organization to a corporation, capitalized for $300,000.

Tank Equipment

Shand & Jurs Company, Berkley, California, has issued an attractive catalog on storage tank equipment. The new catalog, No. 52-B, gives complete details on construction of equipment manufactured by the company. These include vapor recovery systems, gauge covers, manhole covers, sampling wells, automatic tank gauges, breather valves, flow vent valves, vent hoods, special check valves, vapor line traps, fire prevention systems, swing line equipment, cable winches, swing joints, swing line nozzles, internal safety valves, and other equipment.

Valves

Merco Nordstrom Valve Company, Pittsburgh, recently issued a service chart describing under the headings, "Operation", "Adjustment", "Lubrication" and "Repair", the proper care of Nordstrom lubricated plug valves. The service chart is printed on heavy stock, suitable for tacking on the wall. Copies may be obtained by addressing the company at Pittsburgh.



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Catalogs and Bulletins

Welding Machine
The Ideal Electric and Manufacturing Company, Mansfield, Ohio, has issued a bulletin describing the Noel "Speed Arc, High Efficiency, High Power Factor Welders."

Pumps
Gaso Pump and Manufacturing Company, Tulsa, Oklahoma, has issued a new catalog describing its complete line of oil field pumps and other products. It is profusely illustrated.

Automatic Control Valves
Golden-Anderson Valve Specialty Company, Pittsburgh, has issued Catalog No. 25, which describes some of the various types of automatic control valves for use in steam and water service.

Recording Instruments
The Brown Instrument Company, Philadelphia, has issued a folder that tells of the advantages of using recording instruments in the boiler room.

Piping Systems
Tube Turns, Inc., 655 South Fifth Street, Louisville, Ky., has issued a new bulletin describing modern industrial piping systems.

Pendulum Hold-Ups
The National Supply Company, Toledo, Ohio, has isued Bulletins No. 61 and 62 describing the Type A and Type B, respectively, pendulum hold-ups for surface rods.

Cutting Machine
American Chain Company (Andrew C. Campbell Division), Bridgeport, Conn., has ready for distribution a four-page folder which describes the Campbell horizontal wet abrasive cutting machine.

Core Drills
Ingersoll-Rand, 11 Broadway, New York City, has issued a 48-page bulletin which illustrates and describes the Calyx core drill manufactured by the company. Copies may be obtained by addressing the company's main office.

Belts
The B. F. Goodrich Company, Akron, Ohio, has issued a folder which tells of the strides made in the manufacture of rubber belts. The folder describes the 14 ways in which the latest type Goodrich belt has been improved.

Power Drills
Chicago Pneumatic Tool Company, New York City, has ready for distribution Bulletin No. SP-1876, which describes the company's "Power Vane" rotary drills.

Chains and Sprockets
The Baldwin-Duckworth Chain Corporation, Springfield, Mass., has issued catalog No. K-1 on chains and sprockets for power transmission, conveying and elevating. The new catalog contains 54 pages and is a convenient pocket size.

Compressors
Sullivan Machinery Company, Chicago, has issued a 32-page catalog describing its new line of "Plus Portable" two-stage air cooled compressors in four sizes, 105 cubic foot, 160 cubic foot, 210 cubic foot, and 315 cubic foot, available in all desired mountings.

Air Nozzles
The Lunkenheimer Company, Cincinnati, has issued a folder describing its new line of air nozzles.

Gate Valves
The Lunkenheimer Company, Cincinnati, has ready for distribution Bulletin No. F-592, describing the company's "Causal" metal gate valve for corrosive service.

Rules, etc.
The Lufkin Rule Company, Saginaw, Michigan, has issued an attractive 256-page catalog, covering its line of tapes, rules, and tools.

Regulators
Bailey Meter Company, Cleveland, Ohio, has issued a 16-page bulletin, "Bailey Water Feed Regulators," which will be mailed upon request. This bulletin, dealing with thermo-hydraulic feed water regulators, is attractively illustrated and gives interesting data on this type of regulator.

Silent Chain Drive
Link-Belt Company, Chicago, recently released a pictorial 32-page book No. 1425 which describes the company's "Silverstreak" silent chain drive. A copy will be forwarded upon request to interested persons.

Plug Valves
MacClatchie Manufacturing Company, Compton, Cal., has issued a 32-page catalog describing in detail its new "Hydro-Seal" plug valves. A general catalog which lists all of the company's products also has been published and is ready for distribution.

Tool Joints and Swivels
National Supply Company has issued Bulletin No. 59A, describing its tool joints. The company also has issued Bulletin No. 60, describing its Type 300-C-5 "Ideal" swivel.

Centrifugal Pumps
Worthington Pump & Machinery Corporation, Harrison, New Jersey, has issued Bulletin W-310-B4A, describing the Types C, CA and CB centrifugal pumps it manufactures.

Valves
Parker Appliance Company, Cleveland, Ohio, has issued Bulletin No. 38, a 60-page booklet covering a typical variety of valves manufactured by the company.

Speed Reducers
Link Belt Company, Philadelphia, Chicago and San Francisco, has published a 20-page illustrated catalog, No. 1515, which is devoted to its newly developed line of motorized speed reducers.

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Coating Material

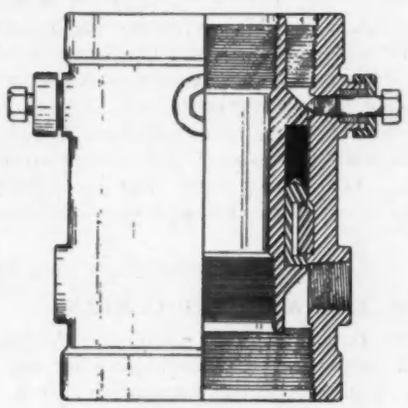
TNEMEC COMPANY

Tnemec Company, Kansas City, has developed a coating material for handling sour crude oil, particularly that produced in the West Texas fields. The material, known as "Tnemetank No. 469", does not harm the tank, the manufacturer claims. Further information may be obtained direct from the manufacturer.

Bradenhead

OIL CENTER TOOL COMPANY

Oil Center Tool Company, Houston, has announced the O-C-T Type "P" bradenhead, providing a full opening, with the I.D. of the head the same size as the I.D. of the casing it fits. It also features the same size A.P.I. casing thread on top as on bottom, both being inside threads.



O-C-T Bradenhead

The new head is equipped with an expansion hanger collar, allowing it to be run and landed through blowout preventer of the same I.D. as the casing. When the hanger collar is screwed on the last joint of casing and lowered into suspension position in the bradenhead, packing is expanded by weight of the pipe. Lock screws add further to the compression of the packing.

Casing Roller

WESTERN PERFORATING COMPANY

Western Perforating Company, Long Beach, California, has developed a new type of casing roller for reconditioning collapsed or dented casing and liners in the well. Elimination of wear on the casing and safety of operation are claimed for the C. & L. Casing Roller, which has been in wide use on a rental basis for the past year.

The tool consists of external tapered rings mounted on an internal eccentric mandrel. The external rings do not rotate but are actuated by the rotating eccentric mandrel. The casing is said to be pressed back into its original form by the rolling motion of the tool without being damaged or worn by the reconditioning work.

An adequate stock of casing rollers is carried on hand by the manufacturers in all sizes for rental purposes in the United States and for sale in foreign countries. The design is such that a given size of mandrel will accommodate rings for two or more sizes of casing. For instance, five-inch and 4¾-inch rings fit the 4¾-inch mandrel; seven-inch and 6⅝-inch rings fit the 6⅝-inch mandrel; nine-inch and 8⅝-inch rings fit the 8⅝-inch mandrel, and all rollers for casing larger than nine-inch are interchangeable on one mandrel.

Rod Hook

BYRON JACKSON COMPANY

Byron Jackson Company, Los Angeles, has announced a new rod hook that was designed to embody safety, convenience and speed in handling rods. With a locking arm providing safety from the standpoint of both construction and operation, an increase in speed and convenience in handling the tool has been secured by means of a natural, one-hand grip at the center of balance combined with a convenient method of opening and closing the hook.

Byron Jackson Rod Hook

In this "BJ" rod hook, the grip which operates the releasing mechanism is located in the shank of the hook at the center of balance so that the operator can, with one hand, steady the hook, open the locking arm, and engage or remove the bail of the rod elevator. The locking arm which connects the bill to the body forms a closed C-link that both increases the strength and eliminates the repeated flexing of the hook under load. The tendency to fatigue and crytalize the metal is thus removed. Moreover, any possibility of the elevator bail becoming disengaged is eliminated since the locking arm can only be unlatched by the operator.

The locking arm is held in closed and locked position by a suitable spring until the operator grasps the releasing mechanism. While the releasing mechanism is compressed, the locking arm remains open; but instantly closes after the elevator bail is safely within the hook and the operator releases his hold.

The rod hooks are furnished in three sizes—the 10-inch, the 15-inch and the 20-inch. These numbers indicate the capacity in tons with a factor of safety of three based on the elastic limit of the metal. In order to ease the tension on the threads of sucker rods in handling long strings, the 20-inch rod hook is constructed with two strong springs—one inclosed within the other—to provide a four-inch travel with a soft, powerful action, but without unduly increas-

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President

ing the overall length. These springs have sufficient strength to lift the section of rods being unscrewed and so reduce the possibility of burring and offering greater convenience in operation.

Excavator

HARNISCHFEGER CORPORATION

The Harnischfeger Corporation, Milwaukee, has announced a new full-revolving ⅜-yard excavator, known as the Model 100, bantam weight. Weighing approximately 15,800 pounds, this new machine is fully convertible at a new minimum of time and expense for a wide range of uses among contractors, material yards, quarries, etc.

Travel speed from 1½ to three miles per hour combined with easy steering, climbing and quick turning ability are provided. Standard swing speed is five revolutions per minute with split second clutches for easy control, fast starting and stopping and quick spotting of the dipper. Live boom chain crowd mechanism permits booming up and down without changing length of chain. Short tail swing fits it for working in close quarters, while its light weight assures maximum traction over all types of ground. The full vision cab, mounted far ahead of the main machinery, is of modern streamline design permitting an unobstructed visibility of 210 degrees.

All welded fabrication has reduced weight and increased structural strength. The revolving frame and side stands are a single piece, combining automotive box and X frame in one solid welded structure. The boom is also of light welded tube construction, providing strength and reducing counterweight behind the center pin.

The Ford V-8 truck motor delivers 40 horsepower at 1300 revolutions per minute with ample reserve for all operations. The power plant may be renewed on the Ford replacement plan. Deisel power is also available.

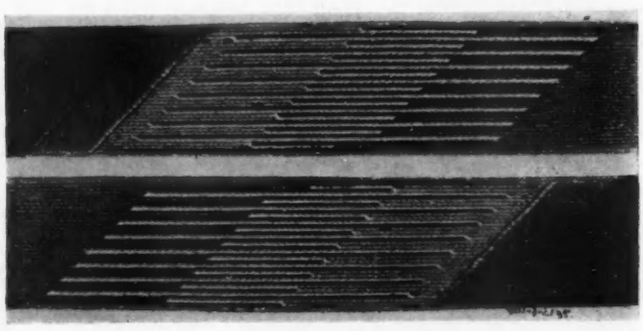
Belt

GOODYEAR TIRE & RUBBER COMPANY

Goodyear Tire & Rubber Company, Akron, Ohio, has announced a patented vulcanized splice for use in manufacturing its "Compass Cord" transmission belt.

By means of this new vulcanizing method, these belts now can be made endless on the drive. This development enables belt users to obtain the belting in roll-lot, non-endless lengths for use on belt drives where it formerly was necessary to dismantle the pulleys to install an endless belt.

The ends of the Compass belt are joined together by dovetailing the load-carrying core of cords at the splice and by vulcanizing the spliced portion of the belt with a portable vulcanizer developed for this purpose. The belt is so constructed that the load is carried by a layer of cords, laid side by side, embedded in rubber, and sheathed in a protecting fabric envelope.



Goodyear Belt

Squeaks *from the* BULL WHEEL

"Yes," said the old man, "I have had some terrible disappointments, but none stands out over the years like one that came to me when I was a boy."

"What was it?"

"When I was a boy I crawled under a tent to see the circus and I discovered it was a revival meeting."

Preacher: "Do you know, Charley, the two words which start the longest sentence in the world?"

Groom: "I do."

Preacher: "That's right."

"They say the King of Denmark lives a dog's life."

"Of course; he's a great Dane, isn't he?"

A dinner guest in a Virginia home was telling his host how to prepare ham that would be even better than the famous Virginia ham.

Guest: "Place the ham in a deep pan and the first day soak it in a bottle of rye whiskey and let it cook awhile. The second day add a bottle of Jamaica rum and the third day a bottle of port wine and the fourth day a bottle of Bourbon."

Host (turning to the colored cook): "What do you think of that?"

Negro Cook: "Ah don't know 'bout de ham, but it sho' sounds like mighty fine gravy."

Your mother-in-law was here, ma'am. She waited all afternoon for you.

Oh, dear; was she very incensed?

Well, I don't know, ma'am. On account of this cold in my head I couldn't smell none.

"Are you a doctor?" asked a young lady, stepping into a drug store.

"Naw," replied the youth behind the white counter. "I'm just the fizzician."

The young lady is not a minor, is she?

Oh, no; she works in a beauty parlor!

Two negroes, who had not seen each other in five years, discovered each had been married during this time.

"What kinda woman did you-all get, Mose?" asked Rastus.

"She's a angel, Rastus, dat's what she is," replied Mose.

"Boy, you sho is lucky, mine's still livin'." Rastus muttered sorrowfully.

A traveling salesman was calling on a grocer when a poor woman came in begging.

"Ask the boss, there," the grocer (a small man), said to her, pointing to the salesman by way of playing a joke on him.

"Here, boy," said the salesman to the grocer, "give this woman a dollar out of the cash register."

The grocer paid.

"I would like to see the Judge, please."

"I'm sorry, sir, but he is at dinner."

"But my errand is important."

"It can't be helped, sir. His Honor is at steak."

Judge—We must have actual evidence of this man's mental incompetence before we can send him away.

Attorney—Surely, your honor. (Then turning to the man)—Mr. McNutt, what is your chief ambition in life?

Mr. McNutt—To sell my United Founders at 78¼.

"My, it was fine of you to jump off the bridge and rescue your little friend! Why did you do it?"

"He had my skates on when he fell in!"

"Bobby, why are you so unkind to nurse? Don't you like her?"

"No, I hate her. I'd like to pinch her cheeks like daddy does."

A darky named Sam borrowed $25 from his friend Tom, and gave his note for the amount.

Time went on, the note became long past due, and Tom was very impatient for its payment.

One day the two met on the street. Tom stopped and said with determination: "Look heah, man, when ah you gwine pay dat note?"

"Ah ain't got no money now," replied Sam, "but I'm gwine pay soon's Ah kin."

"Yo' been sayin' dat fer months," retorted Tom. "But it don't git me no money. Yer gwine pay dat money here and now; that's what yer gwine do. Efen yo' don't yo' know whut Ah'm gwine do, Ah'm gwine burn yer old note, then whar'll yo' be at?"

"Yas yo' will! Yas yo' will!" Sam shouted. "Jes yo' burn dat not o' mine, and Ah'll pop a law-suit onto you!"

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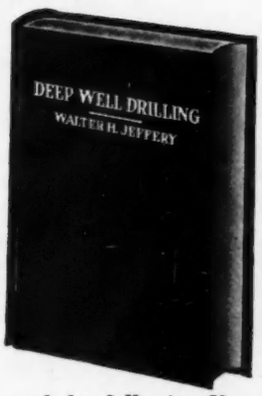
by **WALTER H. JEFFERY**



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3—HOWCO TESTER—Formation tests have been successfully accomplished with this device down to almost 10,000 feet.

4—HOWCO FULL HOLE CEMENTER—In areas where it is necessary to place screens or perforated liners adjacent to producing sands this very efficient device affords means whereby screen or perforated liner of the same size as the blank casing is run on the lower end of the blank casing, circulation established and all heavy muck, cavings and cuttings flushed from behind the screen or perforated liner, and the casing cemented—all in one continuous operation. Such a method is vital to deep wells in which the restricted size of the hole makes it necessary to run small diameter casing.

5—HOWCO CEMENT WASH PIPE LINING—Used in connection with the Full Hole Cementer or in any perforated liner when it is desirable to get full circulation down through the entire length of the perforated section to flush out the muck from behind the perforated section.

6—HOWCO MULTIPLE STAGE CEMENTER—Makes it possible to do two cementing jobs on a single string of casing in one continuous operation, requiring only half the usual pump pressure; also a stage of cement may be placed for the purpose of conserving shallow production sands behind casing in a deep well.

7—HOWCO FLOATING EQUIPMENT—With 100% performance record in the difficult casing territory below 9,000 feet, including the world's deepest string of casing, this equipment is designed to provide minimum interference with the flow of cement slurry, consistent with ample floating strength for the longest string, and is readily drilled out.

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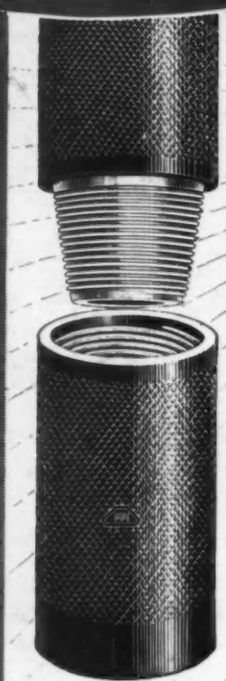

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